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PENICILLIN ALONE IN NEUROSYPHILIS

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The Penicillin-Syphilis Group at the University of Pennsylvania has treated 746 patients with penicillin since Nov. 11, 1943. Of these, 283 had neurosyphilis. The average period of observation is 357 days, the longest period of observation being 719 days. One hundred and nineteen had been observed from 120 to 364 days, 55 for 365 to 599 days and 23 for 600 days and over. Thanks to the follow-up workers of the Institute for the Control of Syphilis, 97.7 per cent of these patients have been kept track of and returned for periodic observation and treatment. The material is classified by diagnosis and initial spinal fluid findings in table 1. The patients with negative spinal fluids at the outset showed symptoms against which response could be measured.

POINTS DESERVING EMPHASIS IN THIS MATERIAL

In order to be considered for penicillin treatment, the patient must have presented some symptom, sign or serologic finding that would serve as a measuring stick for improvement or failure. Treatment was confined to penicillin; no adjuvants, supplements or adjuncts were employed if penicillin results did not meet expectations except, through error, in 1 case of juvenile dementia paralytica. Treatment of various kinds before penicillin had, however, been employed in 128 cases but none after penicillin was once begun. Moreover, no patient had had fever within a year preceding the use of penicillin; but a number of patients had been receiving routine nonintensive treatment with arsenicals and bismuth up to within one month of their first penicillin course.

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From the Institute for the Control of Syphilis, University of Pennsylvania and United States Public Health Service cooperating, and the Penicillin-Syphilis Panel of the University Hospital. The Institute, the Departments of Neurology, Ophthalmology, Dermatology and Syphilology, and Pediatrics, and the Division of Venereal Disease Control, Philadelphia City Department of Public Health, and the Philadelphia General, Pennsylvania and Children's hospitals are represented in the authorship.

We have had the advantage, indispensable, we believe, to effective work in neurosyphilis, of uniformity of serologic technic and evaluation.[1] Laboratory and technical disparities when reports come from differing sources, or changing technicians, are a leading difficulty in therapeutic as in diagnostic interpretation. The neurosyphilis material has also had the advantage on the clinical side of group and specialist evaluation of progress and status.

SOME DEFECTS OF THE MATERIAL

The lack of a preplanned dosage system was not made good until after the second deadline report [2] in October 1944. Of 113 cases now managed by preplanned systems, only 61 have been observed for 120 days or more and will therefore be subsequently reported on.

A more or less unavoidable defect when the patient's recovery is at stake in the treatment experiment is the tendency to prolong treatment and increase the individual course and total dosage in patients who are refractory or respond slowly. This obscures the effect of lower dosage and of prolongation of treatment as such. Lack of a clearly defined and consistent terminology makes the problem of quantitative appraisal of both serologic and clinical improvement difficult. To conserve space certain of the diagnostic and treatment progress codes developed are here omitted but will be available to inquirers on request.

DRUG AND METHODS OF USE

Sodium penicillin from different manufacturers was used throughout. When possible but not invariably, each patient received the product of a single manufacturer. Since March 1944 all schedules have been three hour interval, round-the-clock intramuscular injection, using isotonic solution of sodium chloride, usually 20,000 units per cubic centimeter. We emphasize skilled handling and injection technic, and no local anesthetic is necessary. We have no significant local reactions. Penicillin solutions were not kept longer than twenty-four hours in the icebox, were protected from air and light and were administered ice cold to the patient.

DECISIONS ON RETREATMENT

Decisions as to retreatment are based on: 1. Failure of the spinal fluid to become normal. The Dattner-Thomas type of residual abnormality was subjected to retreatment to try to secure a completely negative formula.

1. The technical head of the laboratory, Mrs. Verna Mayer Stein, who has held the post for seventeen years and who has performed and read all tests, has passed successfully all state and national evaluation tests of her work. We have come to recognize and trust her results down to decimals, so to speak. The tremendous advantage of such a setup cannot be overemphasized.

2. Stokes, J. H.; Beerman, H.; Ingraham, N. R., Jr.; Lentz, J. W.; Morgan, H. G.; Gammon, G. D.; Steele, W. H.; Rose, E. K., and György, Paul: Penicillin in Late Syphilis, Am. J. Syph., Gonor. & Ven. Dis. **29**: 313-333 (May) 1945.

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Normal and "near normal" formulas are defined in table 2. 2. Relapse in the spinal fluid formula of any degree. 3. Failure of symptoms to respond completely (does not include ordinarily unresponsive objective signs). 4. Relapse of symptoms. Some patients who became worse, when the change was regarded as "progression" rather than secondary degeneration, were treated further with penicillin for good measure. Some patients who obtained negative spinal fluids and especially "near normal" were retreated to "hold the result."

TABLE 1.—*Classification of 197 Cases of Neurosyphilis Observed over 120 Days*

	Abnormal Cerebrospinal Fluid	Negative Cerebrospinal Fluid
Dementia paralytica *	16	1
Dementia paralytica with tabes *	20	2
Tabes dorsalis *	51	12
Meningovascular neurosyphilis *	33	1
Congential neurosyphilis	16	5
Other neurosyphilis *	9	1
Asymptomatic neurosyphilis	30	0

* Cases diagnosed as primary optic atrophy occurred in these categories.

The typing of spinal fluid formulas (types 1, 2 and 3) now standard in the literature [3] was employed in the nomenclature. In connection with the concept of "normal" versus "near normal" (table 2) we have adopted a term indicative of very slight abnormality, so slight as to be ordinarily within common conceptions of the negative, in order to express the idea that the fluid has been abnormal and may ultimately have meaning for relapse or progression or the need for fluid reexamination in cases in which the spinal fluids are known to have been definitely abnormal.

TABLE 2.—*Cerebrospinal Fluid Improvement Code*

	Grade 00—Worse in one or more items of cerebrospinal fluid examination
	Grade 0—No change
Slight improvement	Grade 1—Drop in cells or protein
	Grade 2—Drop in both cells and protein
Striking improvement	Grade 3—Drop in cells, protein, quantitative Wassermann reaction or colloidal mastic curve
	Grade 4—Drop in all four items of fluid examination
	Near normal—Cells 5-10, protein 30-40 mg., 1111000000 colloidal mastic curve
	Normal —Cells 4 or less, protein 10-30 mg., 1110000000 colloidal mastic curve
	DT (Dattner-Thomas inactive formula)—Cells 4 or less, protein 30 mg. or less, regardless of Wassermann reaction and colloidal curve, persisting six months or more

SPINAL FLUID RESPONSE TO PENICILLIN

The, to us, most convincing portrayal in our material, of the effectiveness of penicillin in dealing with spinal fluid abnormality in neurosyphilis, is given in chart 1. It seems clear that in the 39 cases of our original series the trend toward improvement under penicillin has been consistent, prolonged and progressive and occurs in an increasing proportion of the cases over the time period involved. In our report [4] of May 1944 2.6 per cent (1 in 39 cases) had reached normal. In October 1944, five months later, 26 per cent, or one fourth, had reached normal or "near normal." "Striking improvement" (grades 3 and 4) stands at 56 per cent, 33 per cent and 18 per cent at the successive evaluation dates, the gain in negative fluids being made by conversion of striking improvement into normality. In November 1945, thirteen months later, 62 per cent had become normal or near normal. While some of this good effect is doubtless the result of cumulative dosage, time and repeated courses, there is much here and elsewhere in this study to suggest that progress after penicillin is continuous and cumulative after a single course, as after fever therapy. The best effects cannot be seen short of months.

Our study of spinal fluid response to penicillin in 175 cases with initially normal fluids (table omitted) shows that 63 of 175 cases, or 36 per cent, achieved normal or near normal spinal fluids; and 129 of 175, or 74 per cent, made striking improvement. By way of contrast in our first evaluation in May 1944, of 107 cases from various sources 1, or 0.9 per cent, had achieved normal fluid and only 35, or 33.6 per cent, made definite improvement. It seems a not unreasonable conclusion that, the longer patients are treated and observed, the better the results.

Studied by diagnostic categories, our 175 cases show for dementia paralytica 10 out of 16, or 62 per cent, definitely improved (includes grades 3 and 4 improvement and normal plus near normal spinal fluids); for dementia paralytica and dementia paralytica with tabes combined 21, or 58 per cent, were definitely improved and 14 became normal or near normal (39 per cent). Of 51 tabetic patients 44, or 86 per cent, definitely improved and 29, or 57 per cent, became normal or near normal; and of 30 asymptomatic neurosyphilitic patients 21, or 70 per cent, definitely improved and 18, or 60 per cent, became normal or near normal. Of 33 meningovascular patients 24, or 72.7 per cent, achieved definite improvement, and the spinal fluids of 15, or 45 per cent, became normal or near normal. Of 16 patients with congenital neurosyphilis 13, or 81 per cent, achieved definite improvement and 10, or 63 per cent, became normal or near normal.

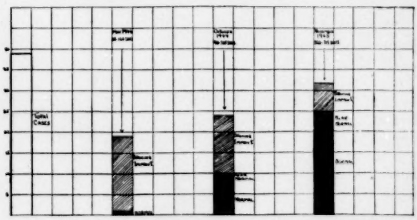

Chart 1.—Progress of the original 39 cases of neurosyphilis toward spinal fluid normality regardless of type of neurosyphilis, dose of penicillin or number of courses.

The good spinal fluid results in tabes and congenital neurosyphilis as well as in dementia paralytica deserve special note. Only 6 fluids in the entire series (3.3 per cent) became worse.

CLINICAL RESPONSE TO PENICILLIN [5]

Our results are summarized for 119 cases with improvable symptoms (table omitted).

Striking improvement was obtained (including normal and near normal spinal fluids) at 120 to 364 days

3. Stokes, J. H.; Beerman, H., and Ingraham, N. R., Jr.: Modern Clinical Syphilology, ed. 3, Philadelphia, W. B. Saunders Company, 1944.

4. Stokes, J. H.; Sternberg, T.; Schwartz, W. H.; Mahoney, J. F.; Moore, J. E., and Wood, W. B., Jr.: The Action of Penicillin in Late Syphilis, J. A. M. A. **126**: 73-79 (Sept. 9) 1944.

5. A more detailed report on individual symptomatology is being prepared with Gammon as spokesman.

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in 35 cases, or 69 per cent, on low and in 37 cases, or 71 per cent, on high dosage. At 365 to 599 days striking improvement stood at 84 per cent (24 cases) for low and 67 per cent (14 cases) for high dosage; and for the longest observed cases 600 days and over,

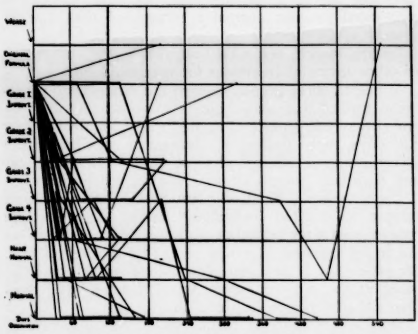

Chart 2.—Behavior of the spinal fluid in asymptomatic neurosyphilis following one course of penicillin regardless of dose (type 3 fluid formula).

it stood at 84 per cent (10 cases) for low and 90 per cent (9 cases) for high dosage.

Summarizing with apologies for the graphic use of "per cent" terminology, symptomatic neurosyphilis showed overall a symptomatic improvement of some degree in 77 cases, or 65 per cent. Definite or striking improvement occurred in 28 cases, or 24 per cent. Slight improvement occurred in 49 cases, or 41 per cent; there was no change in 31, or 26 per cent, and 11, or 9 per cent, were worse. Five of these 11 patients had dementia paralytica. Of 20 patients with dementia paralytica 6, or 30 per cent, showed definite improvement, 7, or 35 per cent, showed slight improvement, 2, or 10 per cent, no change and 5, or 29 per cent, were worse. Of 23 patients having dementia paralytica with

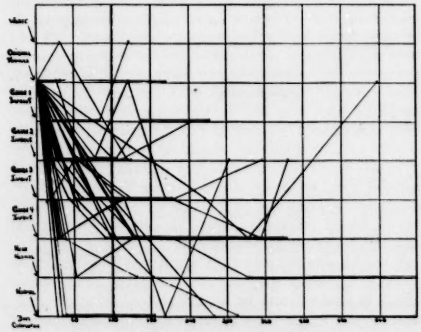

Chart 3.—Behavior of spinal fluid in clinical dementia paralytica and dementia paralytica with tabes (type 3 fluid formula).

tabes 3, or 13 per cent, were decidedly improved, 9, or 39 per cent, were slightly improved, 9, or 39 per cent, showed no change, and 2, or 9 per cent, were worse. Of 42 patients with tabes 13, or 31 per cent, showed definite improvement, 18, or 43 per cent, slight improvement, 9, or 21 per cent, no change and 2, or 5 per cent, were worse. Of 34 patients with meningovascular neurosyphilis 6, or 17 per cent, were definitely improved, 15, or 44 per cent, slightly improved, 11, or 32 per cent, showed no change, and 2, or 7 per cent, were worse.

The response of symptoms in neurosyphilis is, then, good for the types named, in view of the duration of observation. The good record in tabes dorsalis seems to be especially due to the effect of penicillin in lightening pain. In Charcot joints (not included in this series) no improvement occurred in 4 cases, and in 5 cases of gastric crises 2 improved.

SPINAL FLUID RESPONSE IN RELATION TO DOSAGE OF PENICILLIN AND PERIOD OF OBSERVATION

The volume of material and variety of dosage employed permitted only a division into high and low dosage as in the earlier reports.[6] We give the results (table omitted) in 175 cases (for code used see table 2) for a range of 1.2 to less than 4.8 million units in one or two courses ("low dosage") as compared with 4.8 to 10 million units in one to four courses ("high dosage") observed for three time periods, 120 to 364, 365 to 599 and 600 or more days.

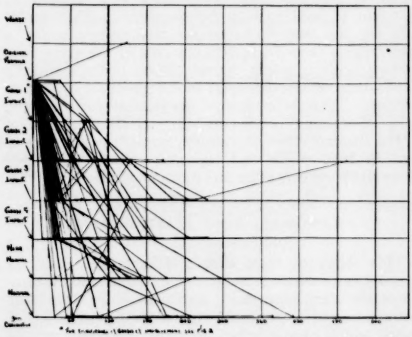

Chart 4.—Behavior of the spinal fluid in tabes dorsalis following one course of penicillin regardless of dose (type 3 fluid formula).

Within the limitations imposed by some small numerical groups in the higher brackets, it would seem that there is really surprisingly little difference between the effect on the spinal fluid of lower as compared with higher dosage. This confirms a suggestion contained in our first report.[4] There is a slight but definite upward trend of good results with longer observation and more treatment, perhaps; but there is still such a trend in the lower as compared with the higher dosage bracket. This suggests to us first that, if penicillin will be effective at all in a given case, lesser amounts may suffice and an early response will be noted. It will be "utilized," in other words. If less is not effective, large amounts are at least not greatly superior. In other words, a part of the excess penicillin may be "thrown away." But the occasional individual case result with late improvement after large dosage inspires or tempts one to the use of larger amounts.

The prolongation of the effect of penicillin beyond the time of administration or even beyond the 120 days subsequent thereto (charts 2, 3 and 4) well into months

6. Gammon, G. D.; Stokes, J. H.; Beerman, H.; Ingraham, N. R., Jr.; Lentz, J. W.; Morgan, H. G.; Steele, W. H., and Rose, E. K.: Penicillin in Neurosyphilis, J. A. M. A. **128**: 653-654 (June 30) 1945.

and perhaps even a year or more after treatment as in malarial therapy, for example, is also suggested.

It is conceivable too that, if commercial penicillin contains a factor of special efficiency in syphilis in small or varying amounts, large total dosage will tend to deliver more of it ultimately than small. The figures here do not seem particularly to support such a hypothesis.

SPINAL FLUID RESPONSE IN RELATION TO NUMBER OF COURSES OF PENICILLIN

The examination of this question (table omitted) is, of course, complicated by the influence of increasing dosage and a selection factor involving the more prolonged treatment of the refractory case. Thus a patient failing to respond either clinically or serologically in 120 days to one course was more likely to receive two or three courses. Nonetheless, examination of the striking improvement group (grades 3 and 4, and normal, and near normal spinal fluids) among 119 cases classified in the same observation period groups as with dosage response discloses a similar upward or favorable trend. Combining the three observation periods, in 81 one course cases 80 per cent, in 75 two course cases 67 per cent and in 16 three course cases 81 per cent showed striking improvement. With apologies for the use of percentage terminology again, a rise ranging from 78 to 100 per cent in the three time periods with a single course seems perhaps a little better than a rise from 60 to 82 per cent with two courses. There is no clearcut demonstration here of the value of repeated courses as such; rather a suggestion of the striking effect of a single course. It seems clear that in both single and repeated courses prolonged observation reveals more and more good effect.

EFFECTS OF PENICILLIN ON THE SPINAL FLUID IN RELATION TO TIME ELAPSED AFTER ADMINISTRATION

This series of three graphs (charts 2, 3 and 4) includes cases which presented type 3 spinal fluid formulas at the start, observed a minimum of 20 days after a single course of penicillin, regardless of dose. Type 2 fluids, which have a better prognosis, generally speaking, were not separately tabulated because of small numbers. The graphs have been statistically checked by Dr. Harold Austin and show significant differences by the chi square test, in the response of symptomatic and asymptomatic neurosyphilis.

All three graphs confirm the observation in a previously published paper [6] that a striking downward trend of the abnormal fluid formula toward normal occurs in the first 120 days and that most of the effect of one course is manifest within this time. Certain differences between the symptomatic and asymptomatic groups appear.

In asymptomatic neurosyphilis, even with type 3 (less favorable) spinal fluid formulas, the trend from definite improvement toward normal or near normal is more pronounced than in symptomatic dementia paralytica and dementia paralytica with tabes or tabes dorsalis. The response of the spinal fluid in clinical dementia paralytica and dementia paralytica with tabes is more delayed than in asymptomatic neurosyphilis. The downward trend toward normal in tabes with type 3 fluid is more rapid and achieved in shorter time than in dementia paralytica and dementia paralytica with tabes.

There is more tendency to relapse to the original formula in dementia paralytica than in asymptomatic neurosyphilis (type 3 fluid) or tabes (type 3 fluid). A relatively larger proportion of spinal fluids in asymptomatic neurosyphilis achieves normal or near normal spinal fluids than in dementia paralytica and dementia paralytica with tabes; i. e., improvement in more advanced forms of neurosyphilis tends to stop short of normal or near normal as compared with asymptomatic neurosyphilis.

In this respect penicillin conforms to the expectancy of other forms of treatment for neurosyphilis.

While all three graphs support the observation previously made [6] that maximum improvement secured by one course takes place most frequently within the first 120 days, more prolonged observation has led to the identification of more and more cases which level off and approach normal or near normal categories after a single course. Relatively few cases sustain outright relapse to original formula or worse after a single course, within the period of our observation. If courses are to be repeated, it would seem that the logical time for repetition of the penicillin course would, as indicated in the previous study referred to, be 120 days after the first course of penicillin.

With reference to the relapse phenomenon (return to the original formula or worse), it may be said that negative fluids can relapse to varying degrees, although frank return from negative to the original degree of abnormality is rare.

An initially inferior fluid response (within 120 days after the first course) does not necessarily foreshadow unfavorable subsequent response, for approximately as many patients who ultimately achieved a good result did less well at the start as the reverse. The trend after 120 days still continues downward toward improvement and negative spinal fluid in asymptomatic neurosyphilis and tabes and even in dementia paralytica and dementia paralytica with tabes. In the last mentioned, however, the tendency to level off short of normal is more pronounced.

RESPONSE OF THE BLOOD SEROLOGIC TESTS TO PENICILLIN IN NEUROSYPHILIS

The code for the grading of blood serologic improvement is omitted. There is no concomitance recognizable between blood and spinal fluid improvement. Of 115 cases with initially seropositive bloods showing definite spinal fluid improvement, only 36 cases, or 31 per cent, showed definite improvement in the blood. In 30 cases the blood titer rose and in the same number (23 per cent) it remained unchanged. Of 82 cases with initially positive bloods, achieving normal or near normal fluids, 25 cases, or 30 per cent, showed definite improvement in blood titer; 44, or 54 per cent, were worse or showed no change. Thus the proportion of (perhaps temporary?) blood serologic failure despite definite spinal fluid improvement is 46 per cent.

It would almost seem as if a different mechanism is involved in blood response as compared with spinal fluid. It can at least be said that the effect of penicillin on the spinal fluid is much more definite, almost tropic one might say, as compared with the effect on the blood, and that, within the period of observation of this study, blood findings have little significance for a symptomatic or spinal fluid result.

MISCELLANEOUS CONSIDERATIONS

Meningeal Reaction in Relation to Penicillin Response (spinal fluid cell count as indicator).—Of 96 cases showing higher cell counts (10 or over)

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57 per cent reached normal or near normal and 81 per cent were strikingly improved. Of 47 with lower cell counts, 36 per cent reached normal or near normal and 55 per cent were strikingly improved. The conclusion that meningeal reaction (elevated cell count) is favorable to penicillin effect is vitiated here by the fact that an unknown proportion of low cell counts may have been the result of previous treatment of high cell count cases by other methods.

Effect of Previous Nonpenicillin Therapy, Including Fever, on Penicillin Results.—On this we are unable to make a clear statement because of small numbers of cases and the question as to whether the results are not "stacked" by the undoubted fact that resistant cases unresponsive to ordinary methods tend to drift to a new method, thus weighting the figures against the previously treated cases.

Our own figures show a trend toward better penicillin response in previously untreated or minimally treated cases. A strikingly more favorable response in tabes and in meningovascular and asymptomatic neurosyphilis that has not received fever therapy may be an affair of weighting and selection but should be watched.

Primary Optic Atrophy.—The evaluation of this material, comprising 60 cases, 19 observed over 365 days and 27 over 300 days, was conducted by Dr. Willard H. Steele, representing the Department of Ophthalmology in the Penicillin-Syphilis Group, and will be published in detail separately. Briefly it may be summarized in part as follows: In all evaluation of primary optic atrophy results, time and certain subjective elements in the current tests are critical considerations. As yet the objective and controlled evaluation of these elements is not fully accomplished. Hence it is impossible to offer here any conclusive statements about penicillin responses in primary optic atrophy. It may be said that improvement in spinal fluid formula and reduction to normal in better than 75 per cent occur in patients with primary optic atrophy despite failure of improvement or even unfavorable progression in the eyes. Far advanced cases are least favorably affected and may progress in spite of penicillin therapy, while early cases in which advice has had to be sought because of failing visual acuity rather than field shrinkage (which attracts attention later) will do better. It cannot be said that "no cases treated with penicillin get worse," for advanced ones may progress. Of 19 patients treated and observed for one year, 2 were blind but showed improvement in cerebrospinal fluid. Two showed early or questionable atrophy, with improvement of cerebrospinal fluid. Of 4 cases presumably arrested prior to penicillin therapy but with abnormal fluids, 4 showed no change in fields, including 1 that showed diminution of visual acuity; yet the spinal fluids of all 4 improved and 3 became normal. Of 9 that were presumably progressing prior to treatment (one with a normal spinal fluid) 4 showed further field contraction and 4 showed no change. The 8 abnormal fluids all improved, and 7 of them became normal. One of the 9 patients became "blind." Of 3 congenital syphilitic patients 1 was blind, 1 showed no change in fields but improvement in spinal fluid and 1, presumably progressing, showed no change but the fluid became normal. It seems clear that the striking effect of penicillin on the spinal fluid is not necessarily reflected in ocular response.

Accordingly, as other investigators have concluded also, the essence of securing response is in early diagnosis and early treatment rather than in treatment after degenerative change is established. Why if, as Breutsch [7] contends, the pathology of primary optic atrophy is vascular-inflammatory in character, like that of dementia paralytica, are not the symptomatic results in primary optic atrophy under penicillin equally good as compared with dementia paralytica? Partly at least, let us hypothesize, because each neuron lost in the optic tract represents a specialized and irreplaceable functional unit. The optic nerve and its neurons have no functional margin. The brain, on the other hand, has a large functional margin of less specialized neurons, and many neurons may be lost before the limits of improvement or restoration of function are reached.

Since lost ground is not recovered so far as the optic nerve is concerned, until data are conclusive, patients with primary optic atrophy should be treated with maximum total dosage of penicillin by the longest of the available time schedules.

TABLE 3.—*Comparison of Reported Cooperative Clinical Group Results with University of Pennsylvania Penicillin Results*

	Spinal Fluid Reduced to Normal (Results in Percentages)				
	Tabes	Dementia Paralytica with Tabes	Dementia Paralytica	Meningovascular	Asymptomatic
Routine	29	17	11	43	36 (1 yr.)
Swift-Ellis	49	28	18	59	39.2 (1 yr.)
Tryparsamide	40	46*	17	47	15 (1 yr.)
Malaria	22	12	9	0*	1.2 (1 yr.)
Penicillin †					
Normal	33	30	0	30	53
Near normal	24	15	31	15	7
Total	57	45	31	45	60

	Clinical Improvement ‡ (Results in Percentages)			
	Tabes	Dementia Paralytica with Tabes	Dementia Paralytica	Meningovascular
Routine	15.4	13.6	16	38
Swift-Ellis	24.8	24.4	42.2	47
Tryparsamide	24.3	21.2	36.6	43
Malaria	21.7	33.9	42.7	46
Penicillin	31	13	35	18

* Less than 20 cases

† Fifty-eight per cent of these cases observed 1 year or less, 29 per cent up to 600 days.

‡ Definite improvement in the penicillin series comprises grades 3 and 4. Slight improvement (1 and 2) is not included. The CCG figures are given as "definite improvement."

A COMPARISON OF OLDER TREATMENT METHODS WITH PENICILLIN THERAPY OF NEUROSYPHILIS, USING COOPERATIVE CLINICAL GROUP RESULTS

This ambitious undertaking involves many uncertainties based on differences in terminology, method of approach and ambiguities on both sides. Nonetheless it is attempted to utilize a straw to show which way the wind blows. The Cooperative Clinical Group results are those cited in the third edition of Modern Clinical Syphilology [3] and were prepared from the graphs of figure 8 in Kierland, O'Leary and Vandoren's paper [8] and the additional information in O'Leary and his associates [9] on asymptomatic neurosyphilis. Since no figures are given in the text of the first paper, figure 8 was chosen because the results stated are com-

7. Breutsch, W. L.: Syphilitic Optic Atrophy, J. A. M. A. **130:** 14 (Jan. 5) 1946.

8. Kierland, R. R.; O'Leary, P. A., and Vandoren, E.: Symptomatic Neurosyphilis, Ven. Dis. Inform. **23:** 360-377 (Oct.) 1942.

9. O'Leary, P. A.; Cole, H. N.; Moore, J. E.; Stokes, J. H.; Wile, U. J.; Parran, T.; Vonderlehr, R. A., and Usilton, Lida J.: Asymptomatic Neurosyphilis, Ven. Dis. Inform. **18:** 45-65 (March) 1937.

plicated by no more than one method of treatment in addition to routine therapy and thus seemed most nearly comparable to ours, which included a number of previously treated cases. The results of this comparison are given in table 3. An unknown amount of allowance must be made for differences in the meaning of terms: i. e. "taboparesis" and "marked improvement," used by the various investigators. It should be recalled that the Cooperative Clinical Group material covered a much longer period of observation, in which the trend to normal with time was clearly evident. Penicillin comparisons should therefore really be made not now but ten years from now.

It will be seen that, if their normal spinal fluids are as strictly normal as we have defined them, Cooperative Clinical Group results are a little better on the spinal fluid in some categories than are penicillin results; but, in the main, penicillin outclasses malaria alone or as the successor of routine treatment. If normal and near normal categories are combined, penicillin surpasses the older methods. In asymptomatic neurosyphilis it ranks far above other methods as a reducer of spinal fluid formulas to normal.

In the field of clinical improvement malaria outranks penicillin, but since malarial results are notably slow of achievement in the aggregate and a ten year material will bring out the best in malarial therapy, penicillin with a two year record as a symptomatic therapeutic agent cannot yet be properly judged.

CONCLUSIONS

1. The effects of penicillin alone in neurosyphilis, in single or repeated courses in a dosage range of 1.2 million to 10 million units and over, were observed.

2. Penicillin sodium in saline solution in a round-the-clock three hour intramuscular administration technic is effective to greater or less degree in the treatment of all aspects of neurosyphilis studied.

3. An adequate mechanism for spinal fluid examination and testing is sine qua non to the work. Effective follow-up was secured in over 97 per cent of our cases.

4. The most striking effects of penicillin are exerted on the spinal fluid formula, the most sensitive and dependable of our indexes.

5. There is no apparent concomitance between spinal fluid response and serologic response in the blood. The spinal fluid responses suggest almost a tropic selectivity of penicillin for the nervous system.

6. There is a steady and definite increase in the proportion of normal and near normal spinal fluids (not mere "improvement") obtained in our original group of patients under penicillin, from 2.6 per cent at the start to 62 per cent after eighteen months' prolongation of observation and appropriate retreatment.

7. Definite improvement in spinal fluid occurred in 74 per cent, and normal and near normal spinal fluids were achieved in 36 per cent of our total series of neurosyphilitic patients without regard to diagnostic category.

8. Dementia paralytica showed 62 per cent definite improvement but no negative fluids. Normal and near normal fluids were, however, obtained in 39 per cent of dementia paralytica and dementia paralytica with tabes combined; 57 per cent of the tabetic, 60 per cent of the asymptomatic neurosyphilitic, 45 per cent of meningovascular cases and 63 per cent of the congenitally neurosyphilitic. Only 6 fluids in the entire series (3.5 per cent) became worse.

9. Overall clinical improvement of some degree occurred in 65 per cent of symptomatic neurosyphilis, 24 per cent improved strikingly, 41 per cent slightly; 9 per cent were worse. Thirty per cent of those with dementia paralytica improved definitely, 31 per cent of the tabetic, 17 per cent of meningovascular patients.

10. As between 1.2 and less than 4.8 million units (low dosage) and 4.8 to 10 million units and over (high dosage), surprisingly little difference in therapeutic effect is observable. There is a slight trend toward superiority in the higher dosage bracket.

11. There is no conspicuous good effect demonstrable from mere repetition of courses, so far. The striking thing is the prolongation of the good effect of one course. This does not invalidate the statement (paragraph 13) that most of the improvement obtained is in the first 120 days. Further study of this problem is in progress.

12. The good effect of penicillin on the spinal fluid is continued over weeks and months after administration.

13. The maximum effect is usually secured in the first 120 days; but improvement and final normality may follow even an unsatisfactory or atypical early trend.

14. Asymptomatic neurosyphilis conforms best, and dementia paralytica least, to the 120 day rule.

15. Relapse may occur in fluids that have become negative, but relapse to original formula or severity rarely occurs.

16. It is suggested, but not proved, that more definite meningeal reaction (higher cell counts) favors a good penicillin response.

17. The results in primary optic atrophy are as yet inconclusive. Treatment should be begun early with large doses. Charcot joints have not thus far responded to penicillin intramuscularly, but 2 of 5 cases of gastric crises improved. Lightning pains improved, raising the proportion of good symptomatic results in tabes.

18. A comparison between Cooperative Clinical Group results using older methods including chemotherapy and fever, and our penicillin results suggests that, particularly as the observation of penicillin effects lengthens, it will be be found to equal or exceed the efficiency of malaria alone or after routine chemotherapy.

19. Penicillin is outranked by malaria as yet in clinical improvement, probably because of the short observation period of penicillin.

20. In asymptomatic neurosyphilis, penicillin ranks far above other methods as a reducer of the spinal fluid to or toward normal.

21. A single course of not less than 4.8 million units in not less than 7.5 days round the clock, using penicillin sodium in saline solution intramuscularly, would seem in our experience to make the best start and often an adequate total therapy for the majority of cases of neurosyphilis. Observation should be carried over at least a year in the absence of convincing evidence of progression before the effects are evaluated and further measures adopted.

22. The results which have been (or are to be) presented in this paper must be interpreted in light of the fact that from June 1943, the date of inception of the

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study, to the present, commercial penicillin has been a changing mixture of various substances. The content of "impurities" has gradually decreased as potency, in terms of units per milligram, has increased. The relative amounts of the several identified penicillin fractions G, F, X and K have likewise varied from time to time. Those two changes, and perhaps others, suggest that therapeutic efficacy may not have remained constant and that it may be significantly different today from what it was originally. It is not now possible to assess the extent to which these changes may have affected the results here reported.

FOLIC ACID THERAPY IN THE ANEMIAS OF INFANCY AND CHILDHOOD

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Detroit

In a previous report[1] it was shown that anemias with a megaloblastic type of blood formation in the bone marrow are common in white infants under the age of 18 months and constitute a syndrome which is specifically influenced by folic acid. The effect of folic acid in the various macrocytic anemias of adults in which the bone marrow is of the megaloblastic type has recently been demonstrated by Spies and his associates.[2] The results reported by this group and those obtained independently in our laboratory are identical and leave no doubt that folic acid is a specific antianemic substance the lack of which results in megaloblastic dysplasia of the bone marrow elements and anemia, the latter usually of macrocytic type. The hematologic criteria for the recognition of the anemic syndrome in infants in which folic acid is effective have been given in detail in our previous communication. Briefly summarized, they consist in the following features:

1. The presence of severe normochromic anemia, usually but not invariably macrocytic as determined by mean corpuscular constants, characterized by a wide spread in the corpuscular diameters as seen in a study of Price-Jones curves.

2. A tendency toward leukopenia and neutropenia associated with the presence of giant metamyelocytes and so-called "macropolycytes" and hypersegmented neutrophils in the peripheral blood.

3. A diminution of platelets, sometimes of severe degree and often associated with an increased bleeding tendency.

4. An atypical bone marrow pattern as seen in fixed and stained smears of aspirated femoral or sternal marrow, resembling or in some cases identical with the pattern seen in addisonian pernicious anemia in relapse. Erythropoiesis is frankly megaloblastic in the advanced stages of the syndrome but may present a pattern intermediate between normoblastic and megaloblastic in earlier phases. The prevalence of abnormal young granulocytes of the type encountered in addisonian pernicious anemia is a constant early finding of considerable diagnostic value.

The clinical picture is variable. Splenomegaly is a common but not a constant finding. Evidence of infection is usually present. The nutritional history is usually poor but may be entirely satisfactory as judged by present day standards. Histamine refractory achlorhydria is frequently demonstrable but does not persist after the anemia is cured.

Up to the present time a total of 29 patients with this syndrome for which the designation megaloblastic anemia of infancy was proposed have been studied in our laboratory.[2a] Twelve of these were treated with folic acid[3] in synthetic form or by oral administration of concentrates rich in "Lactobacillus casei factor." The dosage varied from 5 to 20 mg. per day, the period of treatment from eight days to three weeks. In each case the requirements of Minot and Castle[4] for the evaluation of the reticulocyte response were met. Three of the patients died of severe infections before the effect of folic acid could be evaluated. In the remaining 9 patients an unequivocal response was obtained. This response was characterized by a decided rise in the reticulocyte counts within a few days after the beginning of treatment, as shown in the chart. This was preceded by a return of the bone marrow pattern to a normal type of erythropoiesis and followed by a consistent rise in the hemoglobin values and the red cell counts without further antianemic treatment. The effect of folic acid was indistinguishable from that of commercial purified or crude liver extracts given to other patients with megaloblastic anemia. In follow-up studies up to ten months no relapses were observed in either group.

Pertinent Laboratory Data on Day After Admission of Patient P. O.

Hemoglobin	5.7 Gm. per 100 cc.
Red blood cell count	1,600,000
Color index	1.2
Platelet count (Fonio method)	72,000
White blood cell count	4,500
Differential	
Polymorphonuclears	11
Lymphocytes	87
Monocytes	2
Reticulocytes	1.7%
Bone marrow pattern	Megaloblastic
Bleeding time	5 minutes
Venous clotting time	90 seconds
Prothrombin time	35 seconds
Gastric acidity	
Before histamine	Free 0 Total 8°
After histamine	Free 0 Total 10°
Icterus index	10.2 units
Serum protein	5.47 Gm. per 100 cc.
Mazzini test	Negative

The present report is intended to give a brief account of studies on the effect of folic acid in a variety of anemic conditions observed in infants and children, other than megaloblastic anemia. In view of the specific character of the folic acid effect, it was predicted that this substance would not be effective in any of those types of anemia in which the formation of blood by the bone marrow remains normoblastic. This prediction has been substantiated by our completely negative results with folic acid therapy in children with anemia of prematurity (18 cases), hypochromic microcytic

From the Anemia Clinic of the Children's Hospital of Michigan and the Department of Pediatrics, Wayne University College of Medicine.

1. Zuelzer, W. W., and Ogden, Faith N.: Megaloblastic Anemia in Infancy: A Common Syndrome Responding Specifically to Folic Acid Therapy, Am. J. Dis. Child. **71**: 211 (March) 1946.

2. Spies, T. D.; Vilter, C. F.; Koch, Mary B., and Caldwell, Margaret H.: Observations of the Antianemic Properties of Synthetic Folic Acid, South. M. J. **38**: 707-709 (Nov.) 1945. Spies, T. D.; Garcia López, G.; Menendez, José A.; Minnich, Virginia, and Koch, Mary B.: The Effect of Folic Acid on Sprue, ibid. **39**: 30-32 (Jan.) 1946. Spies,[5]

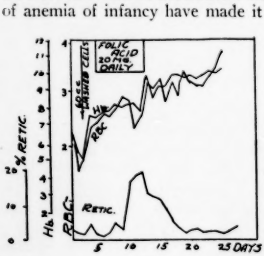
2a. Dr. James L. Wilson of the University of Michigan gave permission to study 2 cases from the University Hospital, Ann Arbor, which are included in this report.

3. The folic acid was supplied through the courtesy of Lederle Laboratories.

4. Minot, G. R., and Castle, W. B.: The Interpretation of Reticulocyte Reactions, Lancet **2**: 319-330 (Aug. 10) 1935.

anemia (5 cases), Mediterranean anemia (1 case), chronic hypoplastic anemia (2 cases), aplastic anemia (1 case), subacute myelogenous leukemia (1 case), acute lymphatic leukemia (1 case) and sickle cell anemia (1 case). In none of the patients with these conditions was a reticulocyte response obtained, nor did improvement of the anemia result even when relatively large amounts (up to daily doses of 50 mg. of synthetic folic acid given parenterally) were used. The prophylactic use of folic acid from birth on over a period of months in premature infants did not prevent the development of anemia comparable to that observed in control patients. Combining folic acid with iron therapy did not increase or accelerate the effect of the latter in cases in which iron was indicated. It is therefore unnecessary to discuss in detail any of the cases in this control group. The findings are again in accord with those recently reported by Spies and his group.[5] The studies of folic acid therapy in anemia thus show a complete agreement of results obtained in infants with those in adults.

The intensive study of bone marrow patterns and the adoption of criteria long generally accepted in anemias of adult life but hitherto neglected in the studies of anemia of infancy have made it possible to establish morphologic criteria for the presence of a deficiency in folic acid and to define the syndrome associated with such a deficiency as megaloblastic anemia of infancy. The recognition of this entity opens a new era in the understanding of mechanisms involved in the production of anemias of early life and clarifies to a large extent the confused classification of the anemias in this age group.



Typical response to folic acid in megaloblastic anemia of P. O., a white girl aged 7 months.

Further studies are in progress in order to elucidate the etiologic factors which can bring about a folic acid deficiency in infants and to reevaluate Castle's hypothesis in relation to folic acid. Spies has pointed out that the effect of liver extracts or brewers' yeast in macrocytic anemias of adults is out of proportion to the amount of folic acid contained in these substances, and it remains to be seen whether factors other than folic acid can have a specific effect on megaloblastic anemias.

CONCLUSIONS

Folic acid is an antianemic factor specifically effective in anemias of infancy with megaloblastic bone marrow and ineffective in any of the other anemias of infancy and childhood investigated thus far. The characteristic abnormal bone marrow pattern constitutes the essential criterion in the diagnosis of megaloblastic anemia of infancy, which is a common syndrome arising on the basis of a folic acid deficiency. There is a complete parallelism regarding the response to folic acid between the anemias of infancy and those of adult life.

5224 St. Antoine Street.

5. Spies, T. D.: Effect of Folic Acid on Persons with Macrocytic Anemia in Relapse, J. A. M. A. **130**: 474-477 (Feb. 23) 1946.

FILARIASIS IN THE SERVICEMAN: RETROSPECT AND PROSPECT

CAPTAIN L. T. COGGESHALL (MC), U.S.N.R.

Many physicians throughout the United States will be faced with the problem of filariasis for the first time as several thousand servicemen have contracted the infection during the war and are now being demobilized. Not only will the individual seek treatment and counsel but the community will likewise wish to know the facts concerning possible danger of secondary transmission. It is my purpose in this paper to acquaint the doctor with some of the more salient points observed in Marines with filariasis at Klamath Falls, Oregon, where 2,595 were collected and observed during a seventeen months period.

Filariasis is an infection produced by a nematode which is transmitted only by an intermediate host. There are four varieties carried by insect vectors (mosquitoes) and one by an aquatic crustacean. The most common filarial organism and the one under discussion is known as Wuchereria bancrofti. It is prevalent in many islands in the Pacific, particularly in the Samoan group, and also in Africa. Surveys in these hyperendemic areas reveal that approximately 60 to 70 per cent of the population are infected. The complication of elephantiasis is common, although there can be filariasis without elephantiasis—a sign of low endemicity. At one time filariasis was frequently encountered in the United States, having been imported with the slaves from West Africa. It made its appearance in several states, Alabama, Indiana, Pennsylvania, Virginia and particularly South Carolina, where transmission factors were the most favorable. However, the disease was unable to perpetuate itself after the slave trade was interrupted and disappeared spontaneously about 1925. This coincides with a similar episode in Australia, where the same disease was introduced through the medium of infected laborers from some Central Pacific islands. At one time 10 per cent of all persons hospitalized in Brisbane had the disease. Here as in the United States filariasis disappeared without specific control measures. The importance of the two incidents can readily be seen, as they furnish evidence that the lightly infected serviceman should present no danger as a source of spread in this country.

LIFE HISTORY OF FILARIAL PARASITE (WUCHERERIA BANCROFTI)

When the proper mosquito vector, of which there are several species, obtains blood from an infected person, the circulating larvae (microfilariae) are drawn into the stomach, begin their development, penetrate the walls and enter the body cavity. As the infected mosquito bites, she deposits a small drop of salivary fluid on the skin containing a few larvae, which penetrate as the fluid evaporates. Or the larvae may be introduced directly through the fissure made by the bite.

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No further trace of the larva is possible until it is recognized as an adult worm in a lymphatic channel or node. The most favored sites are the larger lymphatic trunks of the aorta, but the sites easiest recognized are the more superficial ones in the groins, axillas and spermatic cords. Here the adult worms become sexually mature, fertilization occurs by direct contact of the sexes, and the gravid female exudes microfilariae, which can be found in chylous urine or lymph in dilated vessels. They ultimately can be found in the general circulation, where they are available for transfer to the mosquito, although they may disappear and severe infection can exist without the existence of microfilariae in the blood. As far as the practitioner is concerned there are two important points of consideration in the life history of filariasis: First, the microfilariae are nonpathogenic and can be transferred directly to an uninfected individual without danger of setting up an infection. These larval forms must go through a proper mosquito before they are pathogenic for man. Secondly, the adult worms cannot reproduce themselves in the human host, so that there is no possibility of accumulating more filariae than were originally injected through the bite of the infected mosquito.

EPIDEMIOLOGY

Filariasis (Wuchereria bancrofti) is commonly encountered throughout the tropical belt but is especially prevalent in Africa and the Samoan area of the Pacific. There are numerous mosquito vectors. In some areas it is transmitted by day as well as by night biting mosquitoes. In general the biting habits of the vectors coincide with the appearance of the maximum numbers of circulating microfilariae. The disease is primarily an urban one and the flight range of most vectors is short, rarely exceeding 300 yards in seeking their blood meal.

When the Marines went into the Samoan area early in 1942 there was the extreme military necessity of getting under cover rapidly, and the most accessible spots were the native villages. Here the infection was most intense because the close community life of the natives resulted in constant reinfection. Naturally the available servicemen were likewise the recipients of an overwhelming number of infected bites. The possibility that these men might become infected was taken lightly, because this region had been occupied for a number of years without evidence of filariasis in the white man. However, previous residents had lived in more protected screened areas, and some cases now have been diagnosed in retrospect in view of the present experience. Actually many believed that the white man was not susceptible, although in addition to other reports it had been shown early in 1915 in this country by Johnson [1] and in Australia by Croll [2] that this was not true. During this war there was no doubt that the white man was susceptible, as thousands developed the disease. As nearly as can be ascertained 38,300 men were exposed, and a filariasis registry showed a total of 10,421 diagnosed cases in the Marine Corps and United States Navy as of Dec. 1, 1945 (table 1). There were many cases the diagnosis of which was not entered into the health record. On the other hand, many were erroneously diagnosed merely on their history or by a positive skin reaction. There was considerable difficulty in establishing the diagnosis in the early cases because most medical officers, including those who had spent considerable time in the area, were not familiar with the disease, especially with the early manifestations. However within three to six months, as a result of lymph node biopsies and detection of the adult worm, it was apparent that the disease was filariasis. A directive was then issued for the removal of all men from the area, and patients diagnosed as having the disease were returned to the United States. Another point of interest in the epidemiology of the disease was the high rate of infection in the Samoan area, yet practically no cases were acquired in similar areas where the incidence of infection in the natives was just as high. This is explained by the quartering of troops in immediate contact with the natives on Samoa, while on Guadalcanal, for example, they were more isolated. Also in Samoa vectors were day biting.

1. Johnson, F. B.: Filarial Infection, South. M. J. **8**: 630, 1915.
2. Croll, D. G.: Filariasis Among Australian Troops, Brit. M. J. **1**: 28, 1919.

SIGNS AND SYMPTOMS

Little of the recorded literature on filariasis deals with the acute manifestations of the infection as seen in the serviceman. It is concerned primarily with the later stages as observed in natives who have been reinfected over a period of years. The first signs and symptoms after exposure appeared over a wide period; 0.6 per cent had a symptom free period of less than one month and 9 per cent had an incubation period of over eighteen months, while the greatest number, 24 per cent, had their first symptoms between the tenth and the twelfth month.

TABLE 1.—*Cases Diagnosed*

	Enlisted Men	Officers
Marines	8,548	326
Sea Bees	893	4
Medical Department, Navy	359	61
Other	214	16
Total	10,014	407

TABLE 2.—*Location of Initial Anatomic Involvement in 2,288 Men*

Site	Number	Per Cent
Neck	80	2
Upper extremities	1,084	31
Lower extremities	314	9
Genitalia	1,155	33
Lymph nodes	855	25
Total	3,488	100

A history of the initial signs of filariasis noted that they were confined to the lymphatic system and expressed themselves as lymphangitis, lymphedema and lymphadenopathy. These acute cardinal signs usually appeared after exercise and responded to rest within three to five days.

The anatomic location of these involvements as compiled from health records and testimony is shown in table 2. It was found but not shown in the table that the right upper extremity was involved in 24 per cent more instances than the left, while the left cord and testis showed up in 20 per cent more cases than the right. Systemic manifestations were extremely mild and at most consisted of a mild leukocytosis and a low grade fever of 100 to 102 F. with malaise. None were ever very toxic, although a few complained of mild chills.

Lymphangitis occurred principally along the course of the great vessels of the extremities and in the spermatic cords. In the extremities there was moderate

edema and tenderness but, unlike the more commonly seen streptococcic lymphangitis, it was always retrograde and there were diffuse patches of subcutaneous edema with overlying redness and heat. There was usually a more clearly defined central red streak that extended from a few centimeters to the length of the extremity. After the subsidence of the acute stages a firm cord could be palpated.

Lymphadenitis was noted particularly in the axillas, groins and epitrochlear regions. The nodes may be discrete or matted and moderately tender. They do not undergo suppuration.

Lymphedema was the least frequent finding and occurred at various sites over the body surface. Occasionally it was observed about the eyes, over the scapular or deltoid regions and especially around the cubital fossae. Frequently it was noted as a cold puffiness 2 to 6 inches in diameter with an elevation of ½ to 1 inch.

The spermatic cords were frequently thickened and tender, and often there was considerable swelling of the scrotal tissues. It was not felt that the testicular tissues were enlarged.

Complaints of subjective symptoms were far more numerous than objective findings. They consisted primarily of cramplike pains radiating from the scrotum into the abdomen, generalized aches and pains, numbness, malaise and fatigue. In general it was found that

TABLE 3.—*Number of Palpable Nodes in Filariasis, Malaria and Controls*

	Filariasis	Malaria	Controls
Inguinal	2.4	2.3	1.9
Femoral	1.7	1.4	1.3
Axillary	1.1	0.8	0.8
Epitrochlear	0.4	0.3	0.2

men assigned to tasks they enjoyed seldom reported to the sick bay, and those who sought to better their position reported regularly. For example, men on the football and basketball teams did not experience any difficulty, while men on guard duty and police details would complain bitterly.

Records of the 2,595 cases observed over seventeen months showed that only 22 per cent ever showed any objective findings of acute filariasis if the presence of "shotty" lymph nodes is discounted, and only 18 men, or 0.07 per cent, had to be hospitalized for their flare-ups. The majority were able to perform full or modified duty at all times.

PSYCHOLOGIC ASPECTS OF FILARIASIS

Along with a more thorough appreciation of the somatic symptomatology and clinical course of filariasis has come an understanding of the psychologic effects of this disease. Recognition of the existence of the psychiatric components has clarified many misconceptions which arose in regard to this disease. Especially prominent were unfounded fears of sexual sterility and impotence and fear of development of elephantiasis of the limbs and the scrotum. There soon supervened a realization that their anxiety was not justified. Only in cases of previously psychoneurotic or psychologically inadequate persons were fears concerning this disease retained. Even in areas of high endemicity there is no interference of the reproductive function in the natives. The phobic states concerning elephantiasis derived mainly from identification with native Samoans in areas where the disease was first encountered and from the lack of existing medical knowledge at that time concerning the probable course of the disease. This state of apprehension was almost universally seen among Marines with early signs of filariasis and was ably described by Rome.[3] Subsequent proof that the fears of sexual sterility and impotence were unfounded was obtained from the finding that 107 of 504 marriages after six months had already resulted in pregnancy and the incidence of disturbed sexuality of psychogenic origin was well within the range of normality.

DIAGNOSIS

The absolute diagnosis of filariasis depends on the detection of the adult worm in biopsy or the circulating microfilariae in concentrated blood samples. The latter finding was never made in the men examined at this post, although the search was repeated several times on many. A final survey of 250 men who had been infected almost four years was completely negative. Therefore this procedure is not considered sufficiently valuable for practical purposes. Other reports indicate that the occasions on which the microfilariae have been found were less than twenty in the several thousand cases. The adult worm has been found only on rare occasions.

The blood picture was of little assistance except for a slight increase in eosinophils. Also this finding was just as prominent and frequent in men who had been in tropical areas but had not acquired filariasis.

Use of various antigens for skin reactions showed that approximately 85 per cent were positive. About 15 per cent of normal persons gave false positive reactions.

The physical examination reveals little except adenopathy, the significance of which is doubtful.

In order to establish the diagnostic significance of the palpable lymph node, 200 men with accepted diagnoses of filariasis were examined carefully and compared with 271 cases of malaria in overseas men and 98 men of a comparable age group who had never been overseas. The proportion of demonstrable adenopathy in these men was filariasis 60 per cent, malaria 57 per cent and controls 50 per cent. There was a correlation between the presence of an active fungous infection and enlarged nodes, especially noted in the overseas groups, but there was no significant difference between the size or number of nodes in the men with filariasis and malaria (table 3). Therefore, it is held that except for the rare case the presence of palpable nodes has no diagnostic significance in filariasis.

Another frequent complaint is pain and swelling of the arm or leg after heavy exertion. There is no accurate way to evaluate the degree of pain in different persons, and it was the medical officers' impression that many men ascribed various aches, pains and soreness to filariasis and were seriously concerned while the nonfilarial patients on questioning would testify to an equal number of these symptoms after exertion but were totally indifferent to them. In order to determine whether there was swelling associated with filariasis, 10 men with the disease and 10 without were subjected to weight lifting to the point of exhaustion. Before and after measurements showed no significant difference in the two groups. In summary, other than a past history of exposure and symptoms of acute filariasis there are now no practical diagnostic procedures and no clinical findings which can be relied on to establish the diagnosis in this group of men.

3. Rome, Howard P., and Fogel, R. H.: The Psychosomatic Manifestations of Filariasis, J. A. M. A. **123**:944 (Dec. 11) 1943.

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PATHOLOGY

Since early filariasis is a nonfatal disease, relatively little information is available on its pathology. Practically all published reports to date have been limited to a study of superficial lymphatics or peripheral nodes. Michael [4] has reported that a presumptive diagnosis can be made from the appearance of the tissues even in the absence of the adult worm. On this station an unusual opportunity presented itself to examine the lymphatic system in detail in the case of an accidental death of a man with an unquestionable diagnosis of filariasis. No adult worms were found and there was only slight evidence of lymphatic obstruction, especially in the axillary region. Otherwise there was nothing remarkable. In 10 other instances superficial nodes were removed which showed appearance of a reactive gland, enlarged follicles, hyperplasia of the lymphoid and reticuloendothelial elements and some scattered eosinophilia. The reaction of lymphangitis overlaid by red blotchy areas probably is allergic in nature. Permanent lymphatic obstruction with appearance of filarial elephantiasis was not observed and forms no part of this discussion.

TREATMENT

No specific therapy was employed, because none of the men were ever very ill and findings were so transitory that no base line for accurate evaluation could be obtained. From the time of first observation until the present there was a progressive improvement in the overall picture, so that any compound employed might have given the impression of being beneficial. The most valuable part of the therapeutic program was suggestion. Full explanation of the cause of present difficulties with assurance of future improvement and ultimate complete recovery was used to good advantage. This was demonstrated by a planned gradually increasing program of physical exertion along with activities devised to stimulate mental ease. Much of the early apprehension by the men had its genesis from the fact that the returned patients attracted much attention because of the diagnosis and were repeatedly questioned and examined. They in turn interpreted the interest in their condition as an indication of seriousness. By repeated reassurance fears were allayed and a general improvement was apparent.

Nonspecific measures as application of heat, cold or x-rays to affected parts were not found to be beneficial. Heat actually seemed detrimental in that it increased the pain.

Necessary surgery was not found to be contraindicated because of a diagnosis of filariasis.

PROGNOSIS

Although time will be the deciding factor in determining the prognosis of filariasis, the uninterrupted improvement in the general picture leaves little to be concerned about even if the occasional individual still has a filarial flare-up. There are several reasons why a good prognosis can be expected. In the first place the removal of the patient from the source of infection precludes the possibility that the adult worms will continue to accumulate, since they cannot reproduce themselves in the human body. As stated, they must pass through an appropriate vector and be reintroduced. Secondly, repeated biopsy examinations have confirmed the existence of calcified or disintegrated adult worms, indicative of an active curative mechanism which should in time eliminate the source of difficulty. Finally the meager number of times microfilariae have been found in multitudinous searches testifies to the lightness of the infection. Even in the absence of a proved specific remedy there is little doubt that the infection is self limited and that a favorable prognosis will be a certainty.

ELEPHANTIASIS

Elephantiasis due to the filarial organism results from a blocking of certain lymphatic channels and is undoubtedly produced by repeated assaults to the tissues over a period of years, when exposed to numerous infected mosquito bites. It is a complication that rarely involves 10 per cent of the natives in the most heavily endemic areas. It is now almost four years since the first servicemen were infected and not a single case of elephantiasis has been seen in the 2,595 men at this station. A word of warning to the physician in this connection is necessary, as enlargement of the genitalia or extremity in a patient with the diagnosis of filariasis is not necessarily the result of that disease. Two examples of this occurrence are known to me. The first was a man with a grossly enlarged left testicle with a history of onset coincident with his filariasis. However, on biopsy the tissue examination revealed a highly malignant epithelioma. The other case was a permanent elephantiasis of the left leg which was not due to filariasis but was Milroy's disease. Two other members of the family had the same condition but had never been exposed to filariasis. There are several nonfilarial causes for elephantiasis, such as scarring metastatic cancer, thrombophlebitic disorders, hemangiomas, lymphangiomas, Milroy's disease and lipodystrophy.

THREAT OF FILARIASIS (WUCHERERIA BANCROFTI) TO THE UNITED STATES

There seems little reason to fear the establishment of filariasis in the United States as an aftermath of the returning veteran. Napier [5] states that a climate favorable for the development of the larvae in the mosquito requires a mean temperature of 80 F. and a humidity above 60 per cent. If this is true, only a relatively small area of the United States, those states bordering on the Gulf of Mexico, Georgia and South Carolina, is suitable. Filariasis was once prevalent in a part of that region as a result of the introduction of heavily infected slaves, yet it was unable to maintain itself and died out spontaneously. Also he states that it has been found that it requires approximately 15 microfilariae per drop of blood to maintain transmission. This being true, the servicemen cannot be responsible for secondary transmission, since there are less than 20 recorded cases in which microfilariae have been found, and the concentration was far below the figure given by Napier. Finally, there is no danger of spreading the disease by contact. Actually blood from an infected donor can be used for transfusion purposes without danger, as the larvae are noninfective for man unless they have partially matured in a mosquito and been introduced by biting. These and other reasons, such as better screening and mosquito control, would seem definitely to assure us that filariasis will not spread in this country and that the released serviceman cannot be a source of danger to his associates.

SUMMARY AND CONCLUSIONS

1. Filariasis (Wuchereria bancrofti) is an infection carried by certain mosquitoes and was acquired by 10,431 Navy personnel in the South Pacific area, mostly

4. Michael, Paul: Filariasis Among Navy and Marine Personnel, U. S. Nav. M. Bull. **42**: 1059 (May) 1944.

5. Napier, L. Everard: Filariasis Due to Wuchereria Bancrofti, Medicine **23**: 149, 1944.

in the Samoan group of islands, in 1942. Over a period of seventeen months 2,595 were observed at this station.

2. It was manifested in its early stages primarily by lymphangitis, lymphedema, lymphadenitis and funiculitis and by aches and pains of the major lymphatic areas.

3. Elephantiasis, a complication of filariasis observed in natives and only after prolonged exposure, has not made its appearance in servicemen. Because they are no longer exposed, it is not expected that it will occur.

4. The course of the disease has been one of gradually decreasing severity, so that now it is only the exceptional individual that shows any difficulty even after heavy exertion.

5. There are no proved specific therapeutic agents that can as yet be recommended for use in these mild cases of servicemen. Nonspecific remedies, as cold, heat, local x-ray to affected parts and protein injections, do not influence the course of infection. It is not unexpected that reactivations will be seen and, if encountered, bed rest for a few days is in itself considered adequate treatment.

6. There is no evidence to suggest that filariasis will be able to spread from servicemen to the community regardless of their mode of living. This plus the belief that the infection will have no permanent disabling effects justifies the decision to release men with filariasis from military service.

CORONARY OCCLUSION IN NEGROES

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I am unable to find in the literature a description of the clinical picture of myocardial infarction in the Negro. The diagnosis is rarely made clinically. Hence it is my purpose to describe the clinical characteristics of myocardial infarction in the Negro, to indicate that the disease is as common in the Negro as it is in white persons of comparable age groups and to emphasize that the diagnosis is obscured in the Negro only because dyspnea is the chief complaint and pain is absent.

Because I can find no evidence to support the belief that the Negro does not feel pain as well as the white person, I offer as an explanation for the absence of angina in the Negro the fact that he develops hypertension much earlier than the white person and probably thereby dilates his coronary collateral circulation.

Reports from Grady Hospital in Atlanta, Ga., indicate that the diagnosis of coronary occlusion in the Negro was not made clinically during an eighteen month period.[1] Only 1 case was diagnosed before death in Washington, D. C., in a year.[2] At Charity Hospital in New Orleans the diagnosis was made ante mortem only four times in ten years.[3] These authors concluded that coronary occlusion was rare in the Negro.

However, authors who base their conclusions on combined clinical and autopsy records believe that coronary occlusion in the Negro is not an uncommon condition. Thus the ratio of coronary occlusion in white persons and Negroes was found to be 4 to 1 in Charleston, S. C.,[4] and 3½ to 1 in New Orleans.[3]

Studies based solely on autopsy reports show but little difference in incidence in the two races. Writers in three cities found the ratio to be 2 to 1,[5] 1½ to 1[6] and 1½ to 1.[7] It has been suggested[7] that even this slight preponderance in white persons results from the longer life expectancy (ten years)[8] in the white race.

DATA

I have reviewed 1,000 consecutive autopsies on Negroes and 1,000 consecutive autopsies on white patients of the Louisville General Hospital during the past ten years. From these I have chosen to study only those cases in which coronary occlusion was the immediate cause of death. These patients were taken from all services of the hospital and include all age groups. I believe that these findings accurately mirror the incidence of coronary occlusion as a cause of death in the indigent. I found 16 Negro and 26 white cases. All 16 of the Negro and 18 of the white patients were under 70, a ratio of 1 to 1.1 in the two races.

Dyspnea was the outstanding presenting picture in all the Negroes. The almost invariable picture was an exacerbation, usually sudden, of decompensation of several years' duration. Dyspnea was evident in every case and ankle edema was present in all cases, though to a varying degree. No patient had chest pain. None was diagnosed clinically.

In contrast, over half of the white patients had pain, and with few exceptions these were the only patients in whom the diagnosis was made.

In approximately 25 per cent of Negro and 15 per cent of white patients the diagnosis was obscured by the prominence of cerebrovascular accidents or acute psychoses (tables 2 and 3).

I could find no significant difference in the other clinical signs of myocardial infarction in the two racial groups. Electrocardiograms were made on 12 of the white and 9 of the Negro patients. Of these, 6 of the white patients showed changes definitely diagnostic of myocardial infarction. Only 2 of the Negroes showed such diagnostic electrocardiograms, but 6 of the Negroes had tracings suggestive of myocardial infarction. Serial electrocardiograms, which might have proved the diagnosis, were not made in these Negroes because they did not appear clinically to have myocardial infarction. I have recently seen an electrocardiogram from a Negro which revealed evidence of both anterior and posterior myocardial infarction, auriculoventricular and bundle branch block and pulmonary infarction, all proved at autopsy, so I have no reason to doubt that the electrocardiogram is of potential value in diagnosing myocardial infarction in the Negro.

The only article I have found dealing with electrocardiograms in Negroes is a study of 325 Negro and 322 white patients.[9] The author concludes that coronary occlusion is nine times as prevalent in white persons. I believe, however, that this low incidence of coronary occlusion in Negro electrocardiograms is a reflection of the rarity with which the diagnosis is suspected clinically.

From the Departments of Internal Medicine and Pathology, the University of Louisville Medical School.

1. Davison, H. M., and Thoroughman, J. C.: A Study of Heart Disease in the Negro Race, South. M. J. **21:** 464-469 (June) 1928.

2. Hedley, A. F.: A Study of 450 Fatal Cases of Heart Disease Occurring in Washington (D. C.) Hospitals During 1932, with Special Reference to Etiology, Race and Sex, Pub. Health Rep. **50:** 1127-1153 (Aug. 23) 1935.

3. Burch, G. E., and Voorhies, N. W.: A Study of the Incidence of Coronary Occlusion and Angina Pectoris in the White and Negro Races, Am. J. M. Sc. **198:** 685-690 (Nov.) 1939.

4. Peery, T. M., and Langsam, S. M.: Study of Cardiovascular Disease in Charleston, S. C., Based on Necropsy Statistics, Am. Heart J. **19:** 424-433 (April) 1940.

5. Johnston, Christopher: Racial Differences in the Incidence of Coronary Sclerosis, Am. Heart J. **12:** 162-167 (Aug.) 1936.

6. Weiss, M. M.: Coronary Occlusion in the Negro, Internat. Clin. **4:** 201-206 (Dec.) 1940.

7. Schwab, E. H., and Schulze, V. E.: Heart Disease in the American Negro of the South, Am. Heart J. **7:** 710-717 (Aug.) 1932.

8. The Statistical Abstract of the United States, 1943, U. S. Government Printing Office, p. 83.

9. Ashmen, R.: An Electrocardiographic Study of Caucasians and Negroes, Tri-State M. J. **13:** 2686-2688 (Feb.) 1941.

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Burch and Voorhies,[9] writing from the same hospital, report that antemortem diagnosis of coronary occlusion in the Negro was made only twice in five years.

Hypertension was much more common and much more severe among the Negroes than among the white patients. The Negroes' hearts were larger on chest x-ray and heavier at autopsy (table 4).

I was unable to determine the duration of hypertension among the cases, but it seems likely that the Negroes had had hypertension ten or fifteen years longer on the average than the white patients. This I infer from statistics based on 53,563 admissions to the Tennessee Coal, Iron and Railway Hospital in Fairfield, Ala., which shows the incidence of hypertension to be much higher in young Negroes than in young white persons.[10] Other writers have come to similar conclusions.[11]

The myocardial infarctions in all the cases included in my series resulted from occlusion of arteriosclerotic coronary arteries. Syphilitic aortitis was present in 4 of the Negroes but did not involve the coronary ostia.

I am interested in explaining the absence of pain during coronary occlusion in the Negro. The rarity of angina in the Negro is well known and is commonly ascribed to lack of stress or to inability of the Negro to feel or to express pain.[12] Libman found that 70 per cent of white persons but only 10 per cent of American

TABLE 1.—*Age Distribution*

Age	White	Negro
30 - 39	0	3
40 - 49	4	5
50 - 59	5	3
60 - 69	9	5
70 - 80	8	0
Total	26	16
Youngest patient	42	31
Oldest patient	76	68
Females	35%	37.5%

Indians were sensitive to styloid pressure. He inferred that racial differences in pain sensitivity exist and this might explain the absence of angina in the Negro.[13] His articles did not record any use of the test on Negroes. I used the test on 100 random patients in white wards and 100 random patients in Negro wards and found 66 of the white patients and 67 of the Negroes sensitive.

The only comparison of pain thresholds in Negroes and white persons in the medical literature is the work of Chapman and Jones.[14] They conclude that the Negroes "had a lower pain perception threshold . . . and reacted more readily than northern Europeans to the pain stimulus."[15]

10. Unpublished data by the author.

11. Weiss, M. M., and Prusmack, J. J.: Essential Hypertension in the Negro, Am. J. M. Sc. **195:** 510-516 (April) 1938. Orenstein, L. L.: Hypertension in Young Negroes, War Med. **4:** 422-424 (Oct.) 1943. Kesilman.[16]

12. Wood, J. E.; Jones, T. D., and Kimbrough, R. D.: The Etiology of Heart Disease: A Clinical Study of 623 Cases, with Certain Observations on Race and Climate, Am. J. M. Sc. **172:** 185-199 (Aug.) 1926. Stone, C. T., and Vanzant, F. R.: Heart Disease as Seen in a Southern Clinic: A Clinical and Pathologic Survey, J. A. M. A. **89:** 1473-1480 (Oct. 29) 1927. Laws, C. L.: Etiology of Heart Disease in Whites and Negroes in Tennessee, Am. Heart J. **8:** 608-617, 1932-1933. Weiss, M. M.: The Problem of Angina Pectoris in the Negro, ibid. **17:** 711-715 (June) 1939. Davison and Thoroughman.[1] Schwab and Schulze.[7] Roberts[17] Libman: Studies in Pain.[13]

13. Libman, Emanuel: Studies in Pain, Tr. A. Am. Physicians **44:** 52-63, 1929; Methods of Physical Examination, with Special Reference to Painful Diseases of Thorax and Abdomen, Proc. Internat. Assemb. Inter-State Post-Grad. M. A. North America 1926, pp. 60-66, 1927.

14. Wolff, Harold G.: Personal communication to the author.

15. Chapman, William P., and Jones, Chester M.: Variations in Cutaneous and Visceral Pain Sensitivity in Normal Subjects, J. Clin. Investigation **22:** 81-93 (Jan.) 1944.

COMMENT

The incidence of myocardial infarction as a cause of death among Negroes as I have estimated it (1.6 per cent) is somewhat lower than that estimated by the United States Department of Census (2.6 per cent).[16] My estimate is probably low because, first, I chose only

TABLE 2.—*Presenting Symptoms* *

Symptom	Negroes	White Persons
Pain	0	54%
Dyspnea	100%	46%
Ankle edema	100%	19%
Acute psychoses	25%	15%
Cerebral hemorrhage	20%	15%

* Records incomplete in 1 Negro and 1 white patient.

TABLE 3.—*Antemortem Diagnoses in Cases of Coronary Occlusion Proved at Autopsy*

	Coronary Occlusion	Decompensated Hypertensive Cardiovascular Disease	Cerebrovascular Accident	Acute Psychoses	Sudden Death (Diagnosis Suspected)
White	65%	16%	8%	8%	12%
Negro	0	75%	6%	6%	12%

those cases in which the diagnosis at autopsy was incontrovertible and, second, because in income groups higher than those included in my series the occurrence of coronary occlusion is probably more common. It seems likely that between 2,800 and 4,600 Negroes in the United States are killed every year by myocardial infarction and that many more are disabled by the condition. It is appropriate then that the literature should contain a description of this condition and that, with the clinical picture known, it should be diagnosed with greater accuracy.

The condition is not diagnosed because of the absence of pain. In the Negro every sudden exacerbation of decompensation with severe dyspnea should raise the

TABLE 4.—*Heart Size and Heart Weight*

	White	Negro
Percentage hypertensive	56%	83%
Average blood pressure		
Before admission	138/85	172/125
At admission	139/88	172/116
Average heart-chest ratio	53%	64%
Average heart-weight at autopsy	500 Gm. (66% overweight)	595 Gm. (98% overweight)

TABLE 5.—*Ratio of Incidence of Hypertension in Comparable Numbers of Whites and Negroes*

	Weiss (2,187 Cases) White-Negro	Kesilman (3,000 Cases) White-Negro	Author (53,563 Cases) White-Negro
Under 40	1 to 5.7	1 to 5.9	1 to 7.6
All ages	1 to 2	1 to 3.1	1 to 2.3

suspicion of myocardial infarction. This observation has permitted me to make the diagnosis recently in a number of nonfatal cases.

I believe that the absence of angina in the Negro cannot be explained by an inability to feel or to express pain.[15] Likewise there is little evidence to support the contention that the Negro does not have angina because

16. Murray, Florence: The Negro Handbook 1944, New York, Current Reference Publications, p. 178.

he lacks mental stress.[17] On the contrary, mental stress is the common explanation for the high incidence of hypertension in the Negro.[18] Careful studies indicate a higher incidence of mental disease in the Negro than in white persons in the United States.[19]

It is not known why Negroes do not have angina. In seeking an explanation one can hardly overlook the striking difference in the sizes of the heart of Negroes and the heart of the white patients dying of coronary occlusion. This difference as far as I know has not been mentioned previously. The apparent explanation for this discrepancy in heart size is the greater severity and longer duration of the hypertension in the Negro dying of coronary occlusion. High blood pressure definitely will increase coronary flow.[20] Increasing the diastolic blood pressure from 85 (the average of the white patients whom I have observed) to 125 (the average of the Negro patients) might be expected to increase the flow through the coronary vessels by as much as a liter per minute.[21] Such an increase in coronary flow cannot but increase the volume of the collateral vessels.

It is possible too that the coronary vasodilatation accompanying peripheral sympathetic nerve vasoconstriction may increase coronary flow. In experimental animals sympathetic stimulation alone has tripled coronary flow. The more forceful contractions of the heart may, however, offset this increase in flow.[21]

I do not believe that the anemia found in the Negroes of this series (average red blood count: Negro, 3,910,000; white, 4,230,000) is sufficiently severe to have materially increased coronary flow.[22]

In concluding his painstaking injections of the coronary arteries in patients dying of coronary occlusion, Blumgart [23] states that adequate collateral coronary circulation is the explanation of "silent" coronary occlusions.

CONCLUSIONS

1. Coronary occlusion is rarely diagnosed before death in the Negro.

2. Below the ages of 70, coronary occlusion seems to be as common in the indigent Negro as in the indigent white person.

3. Negroes with coronary occlusion rarely have pain but have dyspnea as their outstanding symptom.

4. Careful clinical and electrocardiographic examination of Negroes with acute left ventricular failure will reveal many diagnoses of coronary occlusion.

5. The long duration of hypertension in the Negro may dilate coronary collateral circulation and account for the fact that Negroes have "silent" coronaries (Blumgart).

17. Roberts, S. R.: Nervous and Mental Influences in Angina Pectoris, Am. Heart J. **7**: 21-35 (Oct.) 1931.

18. Kesilman, Morris: The Incidence of Essential Hypertension of White and Negro Males, M. Rec. **154**: 16-19 (July 2) 1941. Schwab and Schulze.[5]

19. Karlan, S. C.: A Comparative Study of Psychoses Among Negroes and Whites in New York State Prisons, Psychiat. Quart. **13**:160-164 (Jan.) 1939. Wagner, P. S.: A Comparative Study of Negro and White Admissions to the Psychiatric Pavilion of the Cincinnati General Hospital, Am. J. Psychiat. **95**: 167-183 (July) 1938.

20. Wiggers, Carl J.: Personal communication to the author.

21. Anrep, G. V.: Lane Medical Lectures: Studies in Cardiovascular Regulation, Stanford University, Calif., Stanford University Press, 1936, pp. 245-288.

22. Gremels, H., and Starling, E. H.: On the Influence of Hydrogen Ion Concentration and of Anoxemia on the Heart Volume, J. Physiol. **61**: 297-325, 1926.

23. Blumgart, H. L.; Schlesinger, M. J., and Davis, David: Studies on Relation of Clinical Manifestations of Angina Pectoris, Coronary Thrombosis and Myocardial Infarction to Pathologic Findings, with Particular Reference to Significance of Collateral Circulation, Am. Heart J. **19**: 1-91 (Jan.) 1940.

ADDENDUM

Since writing this paper I have seen a Negress with a severe attack of precordial pain radiating down the left arm. She had serial electrocardiograms typical of myocardial infarction with ST_1 take-off a centimeter above the base line. On admission there was no evidence that she had ever had hypertension or decompensation. The attack was not fatal.

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ATABRINE AS A CAUSE OF FATAL EXFOLIATIVE DERMATITIS AND HEPATITIS

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It is generally believed that, aside from toxic psychosis, atabrine causes almost no serious reactions. In May 1941 Bispham [1] reported 49,681 cases of atabrine-treated malaria, many of these representing cases in which suppressive therapy was given with long periods of administration. Out of these only 38 with toxic reactions were found, consisting of severe headache, abdominal pain, gastrointestinal disturbances, mental depression, a few psychoses and a questionable case of blackwater fever. Textbooks of tropical diseases minimize the toxicity of atabrine. Manson-Bahr and Stitt make little or no mention of possible serious visceral damage, and Napier says "We have treated many hundreds of patients with atabrine during the past ten years and in none of them have any serious effects occurred."

In the face of this prevailing opinion at a time when atabrine is being used so extensively it is felt important to present evidence that in a small percentage of cases atabrine is capable of causing serious and even fatal reactions. It is emphasized that these are sensitivity reactions, being similar to reactions produced by many other drugs, such as the arsenicals and quinine in an idiosyncratic or sensitized person. It is not suggested that atabrine is necessarily a dangerous drug, because the cases presented here represent less than a twentieth of 1 per cent of the atabrine-treated malaria in this group.

REPORTED CASE OF SENSITIVITY

No cases of hepatitis and only 1 case of exfoliative dermatitis following atabrine have been found in the literature. Noojin and Callaway [2] reported a case in 1942:

A white woman aged 45 on her own initiative took 0.1 Gm. of atabrine three times daily for five days for chills and fever. On the sixth day because of joint pains, headache and weaknesss (but no fever) she consulted a physician, who discovered diabetes, gave her insulin and discharged her a week later. The following week fever recurred, malarial parasites were discovered in the blood and a second course of atabrine dihydrochloride 0.3 Gm. daily for six days (3.3 Gm. total) was given. A "few days" later she developed pruritus, thickening of the skin, edema and oliguria. Her white blood cell count was 18,650, with an eosinophilia of 60 per cent. Although no mention of liver damage is made, the total proteins were 3.7 Gm., albumin 1.6 Gm. and globulin 2.1 Gm., with a ratio of 0.76. In the course of the disease the patient had a stormy course with generalized oozing and exfoliation. Patch tests

1. Bispham, W. H.: Am. J. Trop. Med. **21**: 455-459 (May) 1941.

2. Noojin, R. O., and Callaway, J. L.: North Carolina M. J. **3**: 239-240 (May) 1942.

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to atabrine were positive at the time of the reaction and four months later when the patient had completely recovered, while control tests with insulin, phenobarbital and other drugs were negative.

No instances of exfoliative dermatitis due to malaria are on record.

STORAGE AND EXCRETION OF ATABRINE

Many studies on the storage and excretion of atabrine have been made since its introduction. Much of the most recent work has not been published. All investigators agree that atabrine is excreted in small amounts over a long period. Dearborn and his associates [3] showed that the average daily excretion in the urine and feces of dogs over four weeks of daily administration reached a level of less than 4 per cent of the daily dose. Maximum concentrations in most tissues were reached in two weeks, and higher tissue levels were attained only with larger doses. They concluded that, since after the second week neither elimination nor storage was increased, 96 per cent must be converted to other substances. Scudi and his associates,[4] in experiments on rats and dogs found the highest concentrations of atabrine in the liver. When administration was stopped, decreased concentrations were found in the liver about the eighth day, but appreciable amounts were still present two weeks later even after a single dose of the drug. Intermediate concentrations were found in the spleen and kidney, from which excretion was even slower. All other tissues but bone marrow and the wall of the small intestine showed low concentrations of the drug. Since urinary excretion never reaches a high level, elimination is slow. It was pointed out that the total urinary output per day did not reflect the size of the dose administered. In the bowel, on the other hand, large amounts were excreted and for long periods after the drug was stopped. Blood concentrations, like urinary concentrations, after oral or intravenous administration showed no constant relationship to the dose administered and never exceeded 1 mg. per hundred cubic centimeters even after large multiple doses. When administration of atabrine is stopped, the blood concentrations are maintained for days and the authors suggest that it is slowly liberated from its deposits in the tissues. It can be seen that further work is needed to clarify the fate of atabrine in the body, especially with respect to its degradation products.

REPORT OF CASES

Five cases of atabrine toxicity, with exfoliative dermatitis and some degree of hepatitis in all, are presented here. Only 2 of the patients survived. All were followed in hospitals in the India-Burma Theater. The last case was studied at a general hospital where careful laboratory studies could be done. This case was the last in the series and because of the knowledge gained in the earlier cases and a preceding history of atabrine sensitivity it was regarded as a test case and so managed. It will be noted that all the patients were Chinese. This may be on the basis of racial idiosyncrasy, because of the indiscriminate and unsupervised, repeated and generous use of this drug so commonly encountered among Chinese soldiers or because of their poor nutrition, which may have lowered their hepatic tolerance. None of these reactions occurred during a time when infectious hepatitis was present in other patients. Autopsies were performed in all fatal cases by Capt. Leon J. Tragerman, M. C., A. U. S. He also supplied the histologic descriptions.

CASE 1.—A man aged 27, Chinese, admitted Sept. 28, 1943, gave a history of fever, headache and backache for three days, and the smear was positive for Plasmodium falciparum. Except for fever of 101.6 F., physical examination was entirely negative. Treatment was begun promptly on the day of entry and he was given quinine 10 grains (0.65 Gm.) three times a day for two days. After two days quinine was stopped and atabrine started 0.1 Gm. three times a day. He also received phenobarbital. Through a nursing error atabrine was stopped after 0.4 Gm. was given, quinine being used instead. His temperature continued elevated at 100-101.6 F. On the sixth day with no temperature change there was onset of a scarlatiniform rash beginning on the face and spreading over the body in a few hours. The throat, while not sore, was injected and there was a fine punctate enanthem on the soft palate. Some follicular exudate was present on the tonsils, and the posterior cervical nodes were slightly enlarged. The spleen and liver were down about 2 cm. below the costal margin and were tender. A fine furfuraceous scaling was just visible on the forehead. By the eighth day the fever rose to 103 F. without rigor. By this time the rash had become severe and the patient's face was definitely desquamating. The face and hands were puffy, and there was a faint icteric tinge to the scleras. The patient had become mentally sluggish and slightly disoriented. Urinalysis at this time revealed 3 plus albumin and 2 to 3 granular casts per high power field and a trace of bile but no urobilinogen. The white blood cell count was 15,300, with 42 per cent polymorphonuclears, 34 per cent lymphocytes and 24 per cent eosinophils. Exfoliative dermatitis due to quinine was suspected, and quinine was stopped. Atabrine 0.1 Gm. three times a day was again started, the patient receiving 0.3 Gm. more, making 0.7 Gm. total dosage. He had also received 225 grains (15 Gm.) of quinine. On the ninth day his icterus index was 105 units, desquamation was more advanced on the face and beginning on the trunk and he was semistuporous. All drugs were stopped, fluids were forced and liver extract was given intramuscularly. The temperature was only 99 F. at this time, and the blood smear was negative for malaria.

Two weeks from the date of entry the patient was mentally clear and the urine showed only a trace of bile and urobilinogen, but the icterus index was 90 units. The liver was enlarged to 3 cm. and the spleen 1.5 cm. below the costal margin and both were tender. The skin showed generalized fine desquamation even to the palms and soles. Therapy consisted in a high carbohydrate, high vitamin diet with added vitamins and daily intramuscular injection of liver extract. By the twenty-fifth day, although his temperature remained elevated at 101-102 F. the patient had begun to eat and was alert, and his icterus index was only 20 units. Urobilinogen was now present in the urine in increased amounts up to 1:40 dilution. A purulent cough had developed and there was considerable exfoliation, large flakes of skin being shed from the whole body. The patient had lost weight, and small lymph nodes were generally palpable through the leathery, thickened skin. The tongue was slick, and several nosebleeds occurred. The liver was now just palpable and only slightly tender. The patient continued febrile until the thirty-seventh day, when a frank bilateral basal bronchopneumonia developed and sulfathiazole was given, 4 Gm. as a first dose and 1 Gm. at four hour intervals. At this time also the patient had several bedsores and, although the danger of any further drug therapy was recognized, the pneumonia was too severe to go untreated. Sulfathiazole was stopped on the forty-sixth day, the patient having made considerable progress. Desquamation was much less, the bedsores were healing, and the patient became fever free and began to gain weight.

Three months after entry he was well enough to determine specific drug sensitivity. Skin tests with quinine were negative (patch and scratch) but the phenobarbital patch test was positive; 0.1 Gm. given orally caused in twenty-four hours a rise in temperature to 101.6 F., conjunctivitis, itching and diffuse

3. Dearborn, E. H.; Kelsey, F. E.; Oldham, F. K., and Geiling, E. M. K.: J. Pharmacol. & Exper. Therap. **78:** 120-126 (June) 1943.
4. Scudi, John V., and Hamlin, M. T.: Proc. Soc. Exper. Biol. & Med. **54:** 127-131 (Oct.) 1943. Scudi, J. V., and Jelinek, Viola C.: J. Biol. Chem. **152:** 27 (Jan.) 1944. Scudi, J. V., and Hamlin, M. T.: J. Pharmacol. & Exper. Therap. **80:** 150-159 (Feb.) 1944.

erythema of the skin. Three days later the patient recovered except for slight flaking around the neck. Quinine 0.3 Gm. was given two weeks later without ill effect. Because of the lack of reported toxic effects of atabrine and the demonstrated sensitivity to phenobarbital, atabrine was not suspected, the hepatitis being questionably attributed to malaria. After further convalescence the patient was discharged four and one-half months after entry.

Three months later, May 14, 1944, the patient again entered the hospital. Ten days previously he had taken one atabrine tablet as prophylaxis against malaria. No other medication had been taken since discharge. Within twelve hours after ingestion of the atabrine he noted fever and a generalized rash which he described as resembling measles. His skin began to desquamate a few days later. Examination showed mild conjunctivitis and generalized mild exfoliation. His blood and urine were normal, and convalescence was uneventful. Patch tests to acetylsalicylic acid, phenobarbital and sulfathiazole were negative, suggesting that the previous positive test to phenobarbital was a nonspecific response of a hyperreactive skin, but atabrine produced a localized papular eruption beneath the patch. He was discharged after being warned of the danger of future ingestion of atabrine. Several months later it was learned that the patient was well but could not be released from duty for further study.

Case 2.—A man aged 24, Chinese, was admitted on April 4, 1944 for shrapnel wounds of the arm, groin and back. An abscess of the back was drained and he did well until June 17, when he began having epileptiform seizures for which he was given phenobarbital 0.1 Gm., three times a day. On July 9 a blood smear during a chill revealed malaria, type undetermined, and he was started on atabrine. July 11 a generalized maculopapular rash appeared, beginning on the face. The rash was blotchy, faded on pressure and was more apparent over the extensor surfaces and over the proximal rather than the distal extremities. The palms were erythematous, the conjunctivas and soft palate were injected and the tongue had a moderate "strawberry" appearance. Atabrine and phenobarbital were stopped, and after a negative quinine scratch test (as described by Dawson and Garbade) malarial therapy was completed with quinine.

By July 17 the patient's temperature was still 102-104.6 F. and the rash had become confluent, involving the flexor surfaces last, and was papulovesicular on the face, with a fine branny scale on the forehead. The tongue had "peeled" and was very red, and there was conjunctivitis. The nodes were generally enlarged and slightly tender. A purulent productive cough had developed, with fine rales in both bases indicative of an early bronchopneumonia. Five days later the skin had become leathery and thickened and was exfoliating. The patient had become dull and apathetic, with puffy face and eczematoid weeping around the eyes, lips and ears. The liver became palpable 2 cm. below the costal margin and was tender. The basal bronchopneumonia failed to respond to three days' full doses of sulfathiazole, which was discontinued. Liver extract and vitamin C were given daily parenterally, along with intravenous plasma and fluids. Patch tests were difficult to carry out, but atabrine was again positive. At the same time negative results were obtained for acetophenetidin, phenobarbital and sulfathiazole.

Several leukocyte counts from July 12 to 25 showed a rise from 12,950 to 41,000 per cubic millimeter, with a progressive fall in the polymorphonuclear count from 80 to 39 per cent as a result of a rise of eosinophils from 1 to 44 per cent, the monocytes remaining unchanged. The urine showed only a trace of albumin.

By August 1, twenty-two days after the administration of 1.3 Gm. of atabrine, the patient became icteric and began to bleed from the rectum and fissures about the mouth, bile was passed in the urine, and he died after being comatose for several hours.

Autopsy showed extensive generalized exfoliation. The cardiovascular and gastrointestinal systems were normal. The respiratory system showed an old right chronic pleuritis and local bronchiectasis of the right lower lobe. The spleen was firm, was three times normal size and had the mahogany color of chronic malaria. The kidneys exhibited rather severe parenchymatous degeneration. The liver weighed 2,000 Gm. and was smooth and a mottled yellow-brown. The cut surfaces were soft and of similar color, with bright yellow blotches obscuring the markings in many areas. Postmortem urine tested with amyl alcohol for atabrine was positive. (Bile, however, may give a false positive reaction.)

Microscopic study of the liver showed severe fatty changes, disorganization of architecture, severe hepatocellular degeneration and, in the areas, apparent necrosis. Mild lymphocytic and plasma cell periportal infiltration was noted, and no regenerative changes or connective tissue proliferation occurred. The skin sections showed varying mixtures of inflammatory and degenerative changes with desquamation. No other pertinent histologic changes were noted. The cause of death was listed as severe acute hepatitis, generalized, exfoliative dermatitis and acute pulmonary edema.

Case 3.—A soldier aged 25, Chinese, was admitted as a casualty on June 8, 1944, two days after suffering a rifle wound on the left leg. Examination showed a compound fracture of the left tibia. No other disease was present. The wound was debrided, a cast applied and the patient started on sulfathiazole 4 Gm. initially and 1 Gm. every four hours and continued on this dosage until June 23. He was also given the usual suppressive atabrine treatment of 0.1 Gm. daily. He had a secondary hemorrhage on June 17 necessitating exploration and arterial ligation. After the cast was reapplied his temperature began to range between 101 and 102 F., and despite negative malarial smears and the suppressive atabrine he was begun on therapeutic doses of atabrine, receiving a full course and then continued on 0.1 Gm. daily. On June 27, on application of a new cast, a local sequestrum was noted. By July 7 the fever had changed to a definitely septic type and at this time a medical consultant noticed jaundice and exfoliative dermatitis, which had already been present several days, and atabrine was stopped after a total dose of 3.9 Gm. The patient was pale, very weak, but rational, and had jaundice, especially of the scleras and palms. Slight conjunctivitis and a slick atrophied tongue were present, and there were crepitant rales in the left base. The spleen was not felt, but the liver was enlarged 2 cm. below the costal margin but not tender. There was generalized shotty lymphadenopathy and the skin was strikingly thickened, leathery and desquamating.

Laboratory study showed a red blood cell count of 2,500,000 per cubic millimeter and a white blood cell count of 11,400 per cubic millimeter with a normal differential. The urine contained bile but no increased urobilinogen on three tests. The icterus index was 100 units. Widal and Weil-Felix agglutination tests were negative, as was an x-ray of the chest. Stool specimens showed only Ascaris ova. Blood cultures on July 7 and 18 were positive for Staphylococcus aureus but the coagulase test was negative, indicating doubtful significance. Because of slight stiffness of the neck a spinal puncture was performed, but the fluid was normal except for the presence of 25 lymphocytes per cubic millimeter.

The patient also received large doses of parenteral vitamins and liver and plasma without effect. He became more jaundiced and soon developed bronchopneumonia for which sulfathiazole was ineffectual. His skin was thought too irritated to attempt patch testing, although subsequent work suggests that it may be done even in this stage. By July 19 he was delirious and died on the following day, forty-one days after entry.

Autopsy revealed an entirely normal cardiovascular system and a gastrointestinal system which showed only ascariasis. The spleen was normal in size and appearance, but the lymph nodes were generally slightly enlarged and bile stained. There was fairly extensive bronchopneumonia in the lower lobe of the left lung. The liver weighed 1,040 Gm. and was two-thirds normal size. Its capsule was wrinkled and the cut surface softer than normal, presenting a diffuse rich yellow to bright tan color with many pin point red zones and complete loss of normal markings. The spleen weighed 140 Gm. and showed normal markings. The kidneys were slightly enlarged and showed cloudy swelling and bile staining. The musculoskeletal

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system was not examined and the skin was leathery and desquamating. There was no evidence in the viscera of septicopyemia.

Microscopic sections of the liver showed severe hepatocellular degeneration, with areas of necrosis. No inflammatory or regenerative changes were noted. The skin sections showed atrophy and desquamation, with little inflammatory change. No striking or significant changes were noted in sections of other organs.

The cause of death was assigned to severe acute hepatitis and exfoliative dermatitis, with chronic sepsis from compound fracture and osteomyelitis of the tibia as contributory cause.

CASE 4.—A man aged 36, Chinese, entered the hospital on July 15 for bilateral extensive shrapnel wounds debrided earlier the same day at a forward hospital. He was in shock but responded to plasma and was given tetanus antitoxin and sulfadiazine. He improved slowly and was afebrile by July 23. A delayed primary suture and skin grafting were done July 26. He did well until August 10, when he began to have an irregular fever. His white blood cell count was 4,500 per cubic millimeter, but a blood smear showed no malarial parasites. However, he was given atabrine from August 10 to 19 (2.8 Gm.) without response. There were no complaints beyond a mild cough.

A medical consultant saw the patient on August 19 and found slight generalized lymphadenopathy, slight enlargement of the spleen and fever. The following day a maculopapular rash appeared on the trunk and proximal extremities and the diagnosis of scrub typhus was suggested, although there was no bite and the patient had been in the hospital for a month. The Weil-Felix test was negative, however. The white blood cell count at this time was 15,050 per cubic millimeter, with 36 per cent lymphocytes.

The rash faded in four days, the fever subsided and a follow-up Weil-Felix test was again negative. On September 3 the patient again had a rise in temperature and this time the malarial smear was found positive, the type undetermined. Because the rash followed atabrine, it was thought safer to treat the patient with quinine, of which he received 2 Gm. daily.

The following day it was noted that the patient looked slightly jaundiced, and he complained of generalized itching. His skin appeared dry, with prominence of follicles resembling keratosis follicularis. The spleen but not the liver was palpable and tender.

He continued to have fever every other day, and since he stated that he had never taken quinine before and the quinine scratch test was negative, the drug was continued. By September 6 he was deeply jaundiced, the keratotic follicles now contained a thin milky fluid, and there was early desquamation over the face. Because of the preceding experience, atabrine was suspected and inquiry revealed that the patient had been receiving, irregularly since entry as a part of a preventive malarial policy, 0.1 Gm. of atabrine daily. No other drugs had been given. It was roughly estimated that the patient had received 4 Gm. in addition to the course of atabrine administered, making a total of 6.8 Gm. The drug was stopped and supportive therapy given in the form of intravenous fluids and plasma, parenteral liver extract and vitamin C. Laboratory study showed that the urine contained bile, urobilinogen up to a 1:100 dilution and albumin. The white blood cell count was 7,700 per cubic millimeter, with 70 per cent polymorphonuclears. The red blood cell count was 3,500,000 per cubic millimeter, the icterus index 200 units, serum protein total 5 Gm. per hundred cubic centimeters, albumin 2.6, globulin 2.4. Two patch tests with atabrine were found positive in twenty-four hours, manifested by itching, scaling and a papular eruption. Controls done with phenobarbital and sulfathiazole were negative. The patient went downhill rapidly, the exfoliation increasing. He died in coma on September 15.

Autopsy was performed the following day. Aside from early left bronchopneumonia and chronic malarial hyperplasia of the spleen, which was three times normal size, the skin and liver were the only organs showing remarkable changes. The kidneys were somewhat swollen and deeply bile stained, and the axillary and periportal nodes were moderately enlarged and soft. The skin was darkened and showed widespread fine exfoliation without large sloughs. The areas of the old atabrine patch tests were both plainly visible, the first one marked by a crust, and the one done twenty-four hours before death showed an actual slough, the control area with sulfathiazole showing no reaction. The liver was less than two-thirds normal size and weighed 900 Gm. The capsule was wrinkled and the cut surface flabby and of a striking mottled pink to red, entirely obscuring the markings. The biliary tract was normal throughout. The duodenal mucosa was edematous.

Microscopic study of the liver revealed severe diffuse necrosis without evidence of regeneration. In addition, interlobular portal radicles are increased in number in some areas, and many of the vessels contained poorly stained ova morphologically compatible with schistosoma japonicum. No cirrhotic changes were present. Section of the spleen showed changes compatible with chronic malaria. Section of the duodenal wall showed numerous ova similar to those seen in the liver mostly in the submucosa and associated with mild inflammatory changes.

The cause of death was listed as acute hepatic necrosis and exfoliative dermatitis with chronic malaria; schistosomal infestation of liver and duodenum, and bronchopneumonia as contributory causes.

CASE 5.—A man aged 31, Chinese, admitted March 5, 1945, had entered the Chinese army as a private in 1930. He fought in over a hundred battles, including the battle of Changsha, and was wounded four times. He came to India, landing in Dinjan in August 1943, whence he went to Ramgarh and stayed until March 1944, training infantry troops and attaining the rank of captain. In April he took part in the battle of Myitkyina. On May 26, 1944 he was wounded by a machine gun bullet, which entered the base of the neck on the left side, traversed the soft tissues, pierced the spinous process of the third thoracic vertebra and emerged at the angle of the right scapula. Both legs were paralyzed, and he lost sensation from the nipple level down. A moderate pleural effusion developed on the left. On May 29 a suprapubic cystostomy with insertion of a Pezzar catheter was performed preceding a laminectomy on June 8 for pressure on the spinal cord at the third thoracic vertebra. He was febrile for two weeks postoperatively but gradually recovered some ability to move his feet and flex his knees. He was transferred to the 14th Evacuation Hospital from the 20th General Hospital and on admission there his general physical condition except for the cord damage was good, and no other abnormality was noted. The cystostomy with indwelling catheter was functioning satisfactorily. The patient remembered no serious illness in the past. He had gonorrhea at the age of 19 and although he had noted no primary lesion he received twenty arm injections of a yellow liquid called 914, without reaction. In 1931 in China he had malaria treated with quinine. He had had no malaria in Burma or India. There was no history of any drug sensitivities and the family history was irrelevant.

The patient first began prophylactic atabrine in April 1944, at which time he took a 0.1 gram tablet daily for three weeks (approximately 2 Gm.). There was no reaction of any kind at this time. From May 1 to 18 he took none but again resumed atabrine daily for the next ten days (1 Gm.). At this time he was wounded and he had no further atabrine until his transfer to the 14th Evacuation Hospital after surgical treatment at the 20th General Hospital, when on October 2 it was again given in 0.1 gram daily doses until November 21 (5.1 Gm.). Following ingestion of the first tablet he had unexplained fever to 101 F. for two days but no further reaction until November 20, when it again rose to 101.4 F. and the following day atabrine was stopped. With the fever there was a general cutaneous reaction described as a punctate maculopapular rash, confluent over the forearms, upper sternum and sacrolumbar area, involving all parts of the body, including the palms and soles. The rash faded on pressure except over the sacral region, where it was hemorrhagic. There was conjunctival injection, fine desquamation around the lips and a barely palpable splenomegaly, but no enlargement of the liver was noted. He had an irregular spiking temperature from 104-105 F., beginning to decline after a week, then to 102 F. for four days, then 103.6 F. for four days and a final drop by crisis to normal on the fourteenth day. The patient was severely ill during the first seven days of fever, with generalized aching and sore throat. The dermatitis became more severe,

involving the buccal mucosa, becoming confluent over the trunk and assuming a violaceous hue. Serous exudation and crusting appeared about the ears and nasolabial folds, and a large flaky desquamation appeared over the scalp, forehead and face. Finer scaling was noted over the sternal and sacral areas, while other regions still showed a macular violaceous eruption. Unfortunately no photographs were taken. The palms and soles lost the original eruptive pattern and exhibited a diffuse pink blush. The weeping and crusting dried up and peeled by December 28. The exfoliative phase terminated after a period of fine desquamation, leaving the skin very shiny, thin and with a silky texture. Pruritus was moderate throughout. There were no general abnormalities other than enlargement of the liver 5 cm. below the costal margin by the ninth day of fever (November 28) and also well below the inner costal margin to the midepigastric level. It was not tender. The spleen became just palpable.

Laboratory work during this phase was as follows:

Nov. 23	RBC 3,900,000	Hgb 75%	WBC 6,900	P-53	L-27	M-7	E-13	
Nov. 25			WBC 43,600	P-50	L-38	M-10	E-7	Schilling to left
Nov. 27			WBC 11,000	P-46	L-39	M-8	E-7	
Nov. 28	RBC 2,000,000	Hgb 60%	WBC 13,000	P-48	L-11	M-16	E-25	Platelets normal

The count gradually dropped to normal through December, the last being:

Dec. 19 WBC 5,600 P-69 L-27 M-3 E-0 B-1

Fig. 1 (case 5).—Appearance of body before atabrine was administered.

The urine on several occasions showed a trace of albumin and a few pus cells but no bile. The icterus index was 10, but the atabrine level could not be done. Therapy consisted of intravenous fluids, high sugar intake, cod liver oil and vitamin C 75 mg. three times a day and the prohibition of all other medications. The patient remained afebrile except for occasional rises in temperature to 100.6 F. for a day or two. By December 28 he was considered recovered and was allowed out in the sun in a wheel chair several hours during the day with no subsequent flare due to light exposure.

On December 30 suppressive atabrine was ordered for all patients, and this patient received 0.1 Gm. on two successive days (0.2 Gm.). There was no febrile reaction, but forty-eight hours later a weeping eczematous eruption appeared over the entire body requiring about eight days to clear. No laboratory studies were done except urinalysis, which was negative. In reviewing the record it was found that the patient had taken ammonium chloride, methenamine, boric acid and acriflavine bladder irrigations, acetylsalicylic acid, magnesium sulfate, morphine sulfate, sodium amytal, sulfadiazine, phenobarbital (total 0.9 Gm.) and atabrine (total 5.1 Gm. in October and November and 0.2 Gm. on December 30). These drugs had been administered at various times between September 22 and November 21. On December 11 the patient was given 0.1 Gm. of phenobarbital without reaction and on Feb. 1, 1945 he was given 13 Gm. of sulfadiazine without reaction. On February 7 a patch test with a suspension of atabrine in water in the form of a paste was performed on the forearm and left for forty-eight hours. A similar patch with an intravenous preparation was applied to the opposite arm. In forty-eight hours there were severe local reactions showing papules, vesicles rapidly becoming

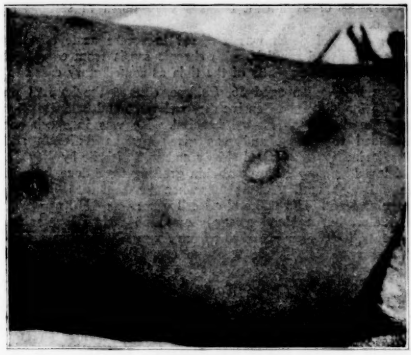

Fig. 2 (case 5).—Closer view.

bullae and subsequent weeping, crusting, itching then exfoliation and finally lichenification over a period of ten days.

Through the courtesy of Lieut. Col. Philip G. C. Bishop of the 14th Evacuation Hospital, under whom the foregoing studies were carried out, the patient was referred back to the 20th General Hospital for further study on March 5. Physical examination at this time showed a spastic paraplegia with anesthesia below the nipple line, a suprapubic cystostomy scar with a small urinary fistula, incontinence of urine, and the old wound scar at the nape of the neck. The liver and spleen were not enlarged, and there was no adenopathy. The skin was smooth, shiny and not scaling, with pigmented roughened areas over the sites of the forearm patch tests. There was a macular fungous infection around the umbilicus, which cleared promptly on therapy. It was realized that this was an important test case, and a definite program of investigation was followed. The patient was bedridden, so that it was easy to keep him inside and eliminate the sunlight factor. Medications of all kinds were prohibited, and the only treatment he received was bladder irrigations with boric acid. Photographs of the entire body and tongue were taken for future comparison (figs. 1, 2 and 3). A daily temperature record was kept and the following preliminary laboratory studies were done:

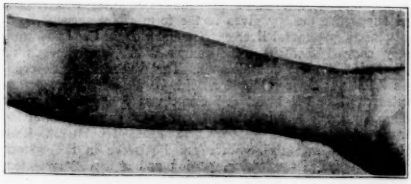

Fig. 3 (case 5).—Skin of left arm before medication.

Chest x-ray: Slight increased prominence of the lung markings bilaterally, probably due to hypoventilation. The left dome of the diaphragm was elevated because of enlarged spleen.

Urine: Many white and red blood cells; specific gravity 1.021

Blood count: Hemoglobin 14.5 Gm., white blood cells 5,100, polymorphonuclears 62, lymphocytes 31, monocytes 3, eosinophils 4. The Kahn blood test was negative. The direct van den Bergh negative, indirect insufficient quantity.

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Glucose tolerance: Fasting 113, in fifteen minutes 135, in thirty minutes 214, in sixty minutes 217, in 120 minutes 183 mg. per hundred cubic centimeters.

Sulfobromophthalein 0 per cent retention.

Icterus index 6.

Serum protein: Total, 7.2 Gm.; albumin-globulin ratio, 4.11/3.09, or 1.3.

Blood atabrine levels, followed at weekly intervals, were, March 7, 8 micrograms per liter; March 15, 9 micrograms per liter; March 26, 4 micrograms per liter. (It is difficult to explain these levels because the patient denied taking any atabrine since December 30. He knew of the danger of atabrine and it was only with great difficulty that he could be made to take a test dose later on. The levels were run by a man skilled in the use of the photofluorometer and doing many of these determinations daily. It appears that this patient had an abnormally long retention of atabrine in some way connected with his sensitivity, unless the method was unreliable. It is equally difficult to explain the rise in blood level from 4 to 12 micrograms per liter on only 0.25 Gm. of atabrine.)

On March 15 he was patch tested on the forearms, the moistened powder of acetylsalicylic acid, phenobarbital, sulfadiazine, sulfathiazole and sodium amytal being used, all read at forty-eight hours and all showing no reaction.

From March 18 to 23 acetylsalicylic acid 0.6 Gm., sodium amytal 0.1 Gm., sulfadiazine 1 Gm., sulfathiazole 1 Gm. and phenobarbital 1 grain (0.06 Gm.) were administered by mouth

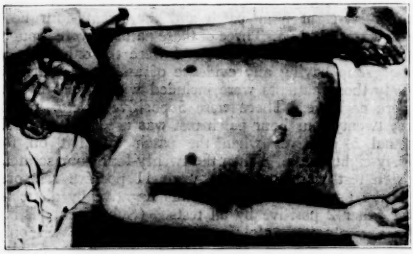

Fig. 4 (case 5).—Appearance of patient seventy-two hours after original test dose of atabrine. Total dose 0.25 Gm. Notice flare of patch test areas on forearms.

with no reaction except a rise in temperature to 99.4 F. when sulfathiazole was given. The dose of sulfathiazole was then repeated without any febrile reaction. Then patch tests were made of morphine sulfate 1 per cent solution, ammonium chloride 3 per cent solution, methenamine powder and magnesium sulfate crystals all read at forty-eight hours and all negative.

From March 28 to April 1 these substances were given internally: morphine sulfate ¼ grain (0.016 Gm.) subcutaneously, methenamine 0.6 Gm., ammonium chloride 1 Gm., and magnesium sulfate ½ ounce. There was no reaction.

Atabrine patch tests were then carried out by saturating a small gauze square with the appropriate dilution of atabrine dihydrochloride and reading the test both at twenty-four and at forty-eight hour intervals:

Atabrine 0.001 per cent, no reaction.

Atabrine 0.01 per cent, some itching. Questionable fine papules.

Atabrine paste made of intravenous powder moistened with water, approximately 0.04 per cent. At twenty-four hours, definite fine papules at site of patch with severe itching.

Atabrine was then administered by mouth:

April 5, atabrine 0.05 Gm.; twenty-four hours later no symptoms, fever or dermatitis.

April 6, atabrine 0.10 Gm.; twenty-four hours later patient complained of slight itching.

The patch test area now showed an eczematoid reaction, but the area in contact with the tape also showed a similar although weaker reaction. Previously there had been no tape reaction.

April 7 atabrine 0.10 Gm. was given. At this time the old patch test areas done at the previous hospital flared on both forearms, and the recent patch test areas with the more dilute

Fig. 5 (case 5).—Back of patient seventy-two hours after original test dose.

solutions, including the one that was negative at 0.001 per cent dilution, developed eczematoid reactions. No further atabrine was given, this making a total dose of 0.25 Gm.

On the morning of April 8, about seventy-two hours after the original test dose, itching and burning sensations over the whole body became severe and the patient was miserable. The temperature rose to 100 F. and the generalized diffuse reddening of the skin with innumerable tiny papules and vesicles made a striking picture. These vesicles were especially evident over the palms and soles, and the tongue was reddened and coated and had begun to scale. Photographs were taken at this time (figs. 4, 5 and 6) and the following laboratory studies were carried out:

Blood atabrine levels: April 9, 12 micrograms per liter; April 12, 12; April 15, 8; April 18, 2; April 21, 10 (probable error); April 23, 4.

Fig. 6 (case 5).—Face and tongue seventy-two hours after original test dose.

The urine contained many red blood cells.

Blood cell counts:

April 9—WBC	15,000	P-83	L-15	E-2	M-0
April 12—WBC	11,000	P-79	L-17	E-0	M-4
April 15—WBC	7,050	P-61	L-34	E-0	M-5
April 18—WBC	7,950	P-72	L-25	E-3	M-0
April 21—WBC	9,900	P-62	L-30	E-2	M-6
April 23—WBC	8,100	P-70	L-26	E-0	M-4

Serum protein: Total, 6.32 Gm. per hundred cubic centimeters; albumin-globulin ratio, 3.85/2.47, or 1.52.

Van den Bergh: Delayed, 0.5 mg. (normal 0.1 to 0.25 mg.).
Cholesterol, 160. Cholesterol esters 117, or 73 per cent.
Blood fibrinogen 0.61 per cent.
Sulfobromophthalein retention 3 per cent.
Glucose tolerance test (oral): Fasting, 96; fifteen minutes, 143; thirty minutes, 178; sixty minutes, 200; one hundred and twenty minutes, 170 Gm. per hundred cubic centimeters.

The patient remained febrile, having a low grade temperature up to 100 F. until April 28. By April 10 he had developed huge bullae over the palms and soles which had to be aspirated and which unfortunately were not photographed. On April 12 the dermatitis began to subside and a fine branny desquamation began to appear over the face and trunk, the eczematoid changes being confined to the sites of the patch tests. From that time he improved steadily and was fairly comfortable by the time his fever declined but by April 29 was still scaling and had scattered violaceous papules over the upper trunk and some slight persistent eczematoid changes at the patch test sites and the paranasal and circumoral regions. A sulfobromophthalein test done on April 27 showed a return to normal, there being no retention of the dye.

COMMENT

It is seen that these cases are remarkably similar in clinical appearance and autopsy findings. In all there was a rash followed by desquamation, the rash being scarlatiniform, maculopapular or a dry scaling involving the entire body, beginning on the face and including the palms and soles. The onset of the rash may occur as early as the second or as late as the tenth day on as little as 0.1 Gm. in a sensitized patient, although larger doses are usually necessary. It may be that sensitization is acquired from previous ingestion of the drug, because all these patieants as well as the one who was the subject of the report had had atabrine one or more times before reaction occurred. Also it seems that smaller and smaller amounts are required to produce severe reactions. In addition to the rash, conjunctivitis and exfoliation of the tongue occur. Jaundice resulting from hepatitis may appear, usually several days after the skin eruption, accompanied by high septic fever, leukocytosis as high as 40,000 per cubic millimeter and with a rising eosinophil count up to 45 per cent. The urine contains bile and albumin but is usually negative for urobilinogen. The liver is first enlarged and tender but rapidly shrinks in size and in 2 cases was strikingly small at autopsy. Mental clouding is a constant feature and as the desquamation progresses to a thick leathery skin, generalized discrete adenopathy becomes palpable. The downhill course is gradual with wasting, often eczematoid skin changes, progressive liver failure and death in coma in the third to the fifth week. At autopsy there is characteristically the exfoliative dermatitis, gross and microscopic evidence of severe hepatitis or necrosis producing a small wrinkled liver with mottled red and yellow degenerated areas, acute cloudy swelling of the kidneys with bile staining, generalized moderate lymphadenopathy and splenomegaly typical of malarial infection.

The evidence for atabrine as the etiologic agent may be summarized as follows: 1. Atabrine was the only drug common to all cases. 2. Positive patch tests to atabrine with negative controls were obtained in the 4 cases tested (80 per cent), whereas in a control group of patients with severe dermatitis only 8.3 per cent positive reactions were obtained. 3. Autopsy and laboratory studies revealed no other etiologic agent. 4. The cases were admitted for totally unrelated diseases, but their terminal clinical and pathologic findings were strikingly similar. 5. Exfoliation was accidentally produced in the first case with only 0.1 Gm. of the drug. 6. The fifth case was well controlled and would seem to leave no doubt that atabrine was the etiologic agent.

ATABRINE SENSITIVITY TESTS

It was thought desirable to devise some sensitivity test to determine atabrine sensitivity. Such a test would be useful both in predicting and in preventing reactions in selected cases and as a diagnostic procedure when clinical evidence of reaction already existed. Routine Chinese admissions to a medical service were used. All of these were proved malarial and were getting or had just received atabrine in therapeutic doses. Ordinary atabrine dihydrochloride tablets dissolved in tap water in approximate dilutions of 0.1 Gm. to 10 cc., giving in effect a dilute paste, were found most suitable for patch tests, a small square of gauze being saturated with this solution and taped on the forearm for the period of the test. A control test using one of the sulfonamides, acetylsalicylic acid or phenobarbital was always used on the opposite arm. In a number of cases the skin was also superficially scratched before the patch was applied. These tests were read at twenty-four or forty-eight hour intervals. In addition, a 1:200 dilution of atabrine dihydrochloride was used for conjunctival tests.

In 45 patients tested no conjunctival reactions were seen, and since 3 of these patients had positive skin tests this procedure was discarded. In an attempt to learn the incidence of false positive reactors, 100 selected patients were tested with the twenty-four hour patch, the forty-eight hour patch and the twenty-four hour scratch-patch tests. Three of these patients were thought to have atabrine psychoses and were the only ones in the group having any evidence of atabrine sensitivity. Only those patients were included whose control tests were negative. There were 5 positive reactors when the twenty-four hour patch test was used and an additional 5 positives when the patch was left on for forty-eight hours. When the twenty-four hour scratch-patch test was used there were 11 positive reactors. Of the psychosis patients 1 was negative by all tests, the other 2 positive by all tests. (Subsequent testing on patients with atabrine psychosis has shown only infrequent positive skin tests.) Positive reactions varied from itching and reddening to ulceration. In some cases a large yellow bulla formed at the site of the patch. The most typical reaction was a pruritic, reddened slightly edematous area with several small discrete papules. Discounting the 2 positively reacting psychosis patients, it is seen that the percentage of false positive reactors is 3 with the twenty-four hour patch test, 8 with the forty-eight hour patch test and 9 with the scratch-patch test. It is believed that this increase in the incidence of false positive reactors is due to the nonspecific irritating effect of atabrine on the skin. This conclusion is further borne out by the type of reaction seen. Itching, reddening and formation of papules was the extent of the reaction seen in the twenty-four hour patch test, while ulceration and formation of bullae occurred only with the more prolonged or more severe tests. For this reason ulceration and bullous formation should be regarded with the suspicion that a nonspecific irritation rather than a positive test for sensitivity has been obtained, although it is possible for true reactors to produce this severe type of reaction. Because of the lessened incidence of false positive reactors and because of the more characteristic skin response, the twenty-four hour patch test is recommended as the one of choice. In cases with an existent dermatitis, this nonspecific irritant effect casts some doubt on the validity of the reaction, but a positive atabrine test with a negative control lends considerable weight to the argument that atabrine is

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the offending agent. Twelve severe dermatitis cases of known cause (scabies, with pyoderma, infectious eczematoid dermatitis and dermatitis venenata) were tested with the twenty-four hour patch test while the skin was in an irritated state, and only 1 venenata case gave a false positive reaction, manifested by vesiculation at the site of the patch. Only 3 cases of proved atabrine dermatitis other than exfoliative dermatitis have been found. One was a maculopapular eruption resembling measles. The other 2 were discrete papular rashes on the trunk and the extremities. Atabrine patch tests were positive in all these cases, and the rashes were reproduced by readministration of atabrine but only after a minimum of 0.6 Gm. was given. One case is cited:

A young Chinese man was admitted for simple P. vivax malaria and was given atabrine. On the third day he became excited and confused and developed a discrete papular rash over the face, trunk and extremities, especially on the distal extensor surfaces. Conjunctival and intradermal tests were negative, but the twenty-four patch test produced an itchy, papular reaction. The malaria was controlled with quinine, and two weeks later, when the patient had recovered, atabrine was again administered and the patch test repeated. The latter was again positive, but no symptoms appeared until 0.7 Gm. was given, 0.1 Gm. the first day, 0.2 Gm. the second and 0.4 Gm. the third day. At this time the psychosis and dermatitis were reproduced, being more severe and more persistent than on the first occasion.

It is felt that patch testing may be useful in patients giving any history of previous dermatologic sensitivity and is definitely of value in determining the etiologic agent in patients suspected of showing skin reactions to atabrine.

SUMMARY

1. In a large series of Chinese patients receiving atabrine for prophylaxis or treatment for malaria, 5 with severe hepatitis and exfoliative dermatitis were encountered, 3 of whom died of this complication. This represented a very small incidence, about 1 in 2,000 to 3,000 cases.

2. From clinical and pathologic studies it is concluded that atabrine was the causative agent of the hepatitis and the exfoliative dermatitis.

3. The reaction may occur from extreme sensitivity on as little as 0.1 Gm. of the drug or may be a toxic reaction from prolonged and repeated administration.

4. Prompt recognition and treatment of these complications with recognized detoxifying agents like vitamin C and liver extract, intravenous glucose and plasma, combined with withdrawal of the drug, may prove to be life saving procedures, although the mortality in 5 cases was 60 per cent.

5. The twenty-four hour patch atabrine test giving only 3 per cent false positive reactions with normal skins and 8.3 per cent false positive reactions in patients with existent dermatitis is a useful test for investigation of atabrine sensitivity.

Men in Natural Sciences.—In the last fifty years men in the natural sciences have had no difficulty in understanding, in fully appreciating the efforts of, and meeting on common grounds with, fellow scientists from every nation of the earth. In the natural sciences, at least, we do not need so much additional practice in fair and humane international relations with our fellow scientists.—Carlson, A. J.: Is There "A Standard to Which the Wise and the Honest Can Repair?" *Science* **103**:377 (March 29) 1946.

TREATMENT OF A SERIOUSLY ILL ASTHMATIC PATIENT

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During the recent emergency the care of patients seriously ill from asthma was thrust on many physicians who were not especially interested or trained for this responsibility. Contrary to the pessimistic view frequently expressed by the public, considerable benefit can be given most patients with asthma by the application of measures now at the command of most physicians. These two considerations have prompted us to reexamine the procedure and remedies which have been found most helpful at the Mayo Clinic in the symptomatic treatment of the patient severely ill with asthma.

HOSPITALIZATION

Severe asthma can be treated best in a hospital, and preferably the patient should have a private room. There are a number of reasons for hospitalization. In the first place, nervous factors are often important in aggravating asthma. Patients who are apprehensive or panic stricken by their dyspnea in an atmosphere of anxiety caused by an oversolicitous family or friends, respond favorably to the new surroundings. Confidence and hope replace in some a fear of impending death. The quiet hospital atmosphere and prompt administration of appropriate remedies as soon as needed help the nervous sufferer from asthma to react favorably.

In the hospital room devoid of rugs, drapes and overstuffed furniture, and where no animals with offending danders have been, the patient is removed from many of the important inhalent allergens found in his home environment. Before the asthmatic patient arrives in the hospital room all feather pillows and the mattress should be made dustproof with special impervious covers. Every hospital should have a supply of such covers immediately available for the asthmatic patient. Kapok pillows are not satisfactory, but rubber foam or air pillows may be used occasionally. The daily cleansing of the room throughout the patient's stay in the hospital is best done with a damp cloth. All types of sweeping should be avoided. The physician should see that orders of this type are transmitted to the proper persons.

If the patient's asthma is associated with hay fever, a pollen filter in the window is most important. Transoms, doors and other windows in the room should be kept closed when a pollen filter is being used.

When bronchitis or other respiratory infections are the chief cause of the patient's asthma, as so often occurs in the group of older patients, there are distinct advantages to hospital care. Asthmatic bronchitis subsides more quickly in a room which is free from drafts, smoke and furnace or other fumes and is kept at an even temperature. Also control of medication with sulfonamides and penicillin when indicated is attained more readily in the hospital than at home, together with oxygen and helium therapy, intravenous medication and treatment of certain complications such as bronchostenosis.

From the Division of Medicine, Mayo Clinic.

The ward, which is less costly than a private room, has a number of serious disadvantages. Much more dust is encountered than in the private room because it is impossible to cover all pillows and mattresses in the ward with dustproof covers and to control other patients' use of cosmetics, their clothing or accessories, any of which may be irritating to the patient who has asthma. An acute attack of asthma alarms all the patients in the ward and interferes with their rest, especially at night.

When hospitalization of the severely ill asthmatic patient is not possible, every effort to make the environment at home as nearly like that of a hospital room is well worth while. It also goes without saying that intelligent, calm professional or home nursing care is essential to the patient seriously ill from asthma. He cannot help himself and he rapidly becomes worse when prompt symptomatic relief is not at hand when he needs it.

USEFUL DRUGS AND PROCEDURES

There are scores of preparations for the symptomatic relief of asthma, many of proved value, others not so effective or with properties which should prohibit their general use. Some of the drugs or procedures most useful in the treatment of asthma will be considered.

Inhalation Therapy.— Inhalation therapy is a valuable part in the treatment of seriously ill asthmatic patients. The use of a mask of the BLB type is most satisfactory. Patients frequently object to being confined in an oxygen tent. Also the continued use of a nasal catheter proves objectionable. The prompt administration of gases is not as readily achieved with the last two methods.

Oxygen or preferably oxygen diluted with helium may be used. For the most seriously ill patient 20 per cent oxygen with 80 per cent helium is preferable. More often greater concentrations of oxygen may be used. The rate of flow of these gases should be from 6 to 9 liters per minute, provided this rate of flow keeps the rebreathing bag filled.

Treatment with oxygen and helium should be used during acute attacks. The patient should understand that the gases are not provided to stop an acute paroxysm but to serve to make him more comfortable during such an episode. Often patients unaccustomed to such treatment will discard the mask at first and call for remedies with which they are acquainted.

Barach [1] studied the deranged physiology of breathing in cases of asthma and advocated administration of therapeutic gases under positive pressure. This tends to relieve the increased negative intrapulmonary pressure of obstructive dyspnea and facilitates the entrance of therapeutic gases during inspiration. During expiration the bronchioles are less constricted. These benefits in turn lessen edema in the pulmonary tissues and vascular congestion.

With these findings in mind, Barach suggested oxygen and helium therapy for two hours daily even in the absence of acute respiratory distress. Such gases may be administered with a positive pressure hood or mask. Positive pressure of from 10 to 13 cm. of water is used in such cases, with a flow of from 6 to 9 liters of gas per minute.

Mixtures rich in helium cause the patient's voice to be higher pitched. A word of explanation will prevent alarm over the pitch of the voice. Oxygen containers should be removed from the room, as a precautionary measure, if burning stramonium powders are employed in treatment of asthma.

Periodic inhalation of carbon dioxide causes hyperventilation, which tends to prevent the retention of secretions and the development of atelectasis. This form of therapy is most helpful for asthmatic patients after undergoing surgical procedures, especially in the upper part of the abdomen. The tendency of such patients to atelectasis is lessened.

Epinephrine.—Many medicines are of proved value in the relief of an acute asthma attack. The use of these may begin before the hospital care is made available and must be continued throughout the stormy phase of the patient's illness.

Epinephrine remains the most useful drug. An aqueous solution administered hypodermically is best. At times it may be necessary to give it at intervals of twenty minutes. The usual dose employed at the Mayo Clinic is 0.5 cc. of a 1:1,000 solution. When a patient presents a history of a satisfactory therapeutic response to less epinephrine, less should be used. The accidental use of inadequate dosage by employing solutions of epinephrine in dilutions weaker than 1:1,000 should be avoided. Such dilutions are frequently used in obstetric practice.

The general limits of blood pressure should be known before the administration of epinephrine. Moderate elevation of the blood pressure is not, however, a contraindication to the use of this drug. An acutely ill asthmatic patient may receive greater trauma to his cardiovascular system from struggling in a severe attack of asthma than he will from the cautious use of epinephrine to halt the attack. The use of this drug for elderly patients who have arteriosclerotic changes must be undertaken with caution, although here too age alone is not an absolute contraindication.

The slow absorption of epinephrine dissolved in oil or in solutions containing gelatin does not make for accurate control of medication. Relief is not as promptly attained when epinephrine is given in oil or gelatin, and epinephrine is absorbed at times when perhaps it is less urgently needed than it was earlier. For this reason use of aqueous solutions are preferred for patients in the hospital where nursing service is available.

As improvement takes place we prefer giving instruction in the use of a spray for the oral administration of this drug to the patient for whom continued use of epinephrine appears indicated. In such a spray a 1 per cent aqueous solution of epinephrine usually is employed, although at times a 3 per cent solution may be required. A number of effective nebulizers are available for the administration of epinephrine. Careful instructions in the use of the spray should be given the patient. The spout of the nebulizer should be placed in the mouth and directed toward the pharynx. As the rubber bulb is squeezed, the patient should inhale deeply the fine spray through the mouth. Merely spraying the throat is frequently the cause for the poor results from this procedure. At the onset not more than two inhalations of nebulized epinephrine at a time should be taken because of the potential danger of overmedication, since a latent period of five minutes or longer occurs before the full therapeutic effect is

1. Barach, A. L.: Physiologically Directed Therapy in the Treatment of Intractable Bronchial Asthma, Bull. New York Acad. Med. **20**: 538-549 (Oct.) 1944.

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realized. After some experience the patient can judge his own dosage needs. Because of the greater strength of solutions of epinephrine designed for oral use, the patient should be warned not to use this solution hypodermically. Profuse bronchial secretions dilute the epinephrine in the spray and may render it ineffective.

Patients to whom large and frequent doses of epinephrine have been administered in the preceding few hours may become "epinephrine fast" on occasions. At this time they will respond little or not at all to the continued administration of the drug. Reversal of this state usually will occur within twelve to twenty-four hours, provided epinephrine is not used and reliance is temporarily placed on measures to be described.

Substitutes for Epinephrine.—For the acutely ill asthmatic patient the intravenous administration of hypertonic solutions of dextrose containing aminophylline is of great value. It has been our custom to administer twice daily 250 cc. of 20 per cent solution of dextrose to which 3¾ grains (0.25 Gm.) of aminophylline has been added. When this concentration of dextrose is not immediately available, a 10 per cent solution may be used. It is probable that the use of such hypertonic solutions reduces pulmonary edema. Likewise this dextrose furnishes nutriment to an exhausted patient. Repeated use of epinephrine tends to exhaust the glycogen content of the liver. Replacing this is accomplished by the administration of dextrose.

Aminophylline [2] is of proved value in relaxing bronchial spasm in the asthmatic patient. Its intravenous administration should be slow and in diluents as described; concentrated solutions should rarely be given by vein. Oral administration of aminophylline can be used to augment the dose given intravenously. From 1½ to 3 grains (0.1 to 0.2 Gm.) administered by mouth three times daily seems to be the optimal dose. This drug may be given by rectal administration in a dose of 7½ grains (0.5 Gm.). For such use the powder may be dissolved in 20 cc. of tap water and inserted by means of a syringe and catheter or the drug may be provided in the form of a suppository to which a sedative has been added.[1]

Ephedrine and Ephedrine-like Drugs.—Use of ephedrine-like drugs stimulates the sympathetic nervous system and thus causes relaxation of the bronchial constriction in bronchial asthma. It also may exert a direct effect on the bronchial musculature. Proprietary preparations commonly employ a barbiturate, such as phenobarbital or pentobarbital, in combination with ephedrine to offset side actions, such as psychic excitation and palpitation. Xanthine derivatives, such as theophylline or aminophylline, likewise are often included in such preparations. Certain newer ephedrine-like synthetic drugs have less severe side effects than the older preparations. For the acutely ill patient these drugs may be used about four times daily. As soon as convalescence becomes established, these may be used every four hours if needed for the control of asthma. When nocturnal attacks of asthma prove troublesome, an enteric coated preparation containing ephedrine may be given at bedtime. Since absorption is delayed, this preparation frequently will control such attacks.

Expectorants.—The mucus in the bronchioles of an asthmatic patient is usually viscous and tenacious. Much exhausting coughing on the part of the patient is necessary to dislodge and raise this mucus. Therefore an expectorant is of utmost value to the patient, particularly when bronchitis is a prominent etiologic factor. Iodides in liberal quantities are the most useful of the expectorants; ammonium chloride is less effective and is reserved for the occasional patient who does not tolerate iodides well. The expectorant is a frequently omitted adjuvant in the treatment of asthmatic patients. The air of the patient's room should be adequately humidified. Inhalation of steam will help in most cases of acute bronchitis.

Two prescriptions containing iodides which are of value are given in table 1. The first mentioned prescription is more palatable and hence is preferred by most patients. When bronchitis is the primary problem,

TABLE 1.—*Two Prescriptions Containing Iodides*

	Gm. or Cc.
Potassium iodide	17.50
Fluidextract of lobelia	1.50
Fluidextract of hyoscyamus	1.50
Glycerin	26.00
Simple elixir in sufficient quantity to make	250.00

Directions: One teaspoon in water three times daily after meals

	Gm. or Cc.
Potassium iodide	10.00
Sodium iodide	10.00
Tincture of belladonna	20.00
Tincture of hyoscyamus	20.00
Tincture of lobelia	20.00
Fluidextract of grindelia, fluidextract of glycyrrhiza, syrup of tolu balsam, each in sufficient quantity to make	250.00

Directions: One teaspoon in water three times daily after meals

TABLE 2.—*Ammonium Chloride in Sour Mixture*

	Gm. or Cc.
Ammonium chloride	10.00
Syrup of citric acid	50.00
Water to make	100.00

Directions: One teaspoon freely diluted with water every two hours

it is preferable. In the second prescription there are apparent pharmacologic antagonists present with the tinctures offsetting the effect of the iodides. However, actually the effects are not diametrically opposed and the prescription is of definite value. Its value is particularly great when bronchorrhea produced by the first prescription is excessive, when associated vasomotor rhinitis is aggravated and when allergic factors are of greatest importance. It should be pointed out to the patient that the expectorant containing iodide is given for the bronchitis and should be used continuously when asthma is troublesome or when asthma is threatened, as in convalescing from acute bronchitis. Should evidence of active tuberculosis be present, iodides are contraindicated. For children a saturated solution of potassium iodide is more easily administered than either of the prescriptions given.

A small percentage of patients are unable to tolerate iodides. An acne-like eruption or swelling and pain in the salivary glands develop. When a skin eruption appears only after iodides have been given for several days, iodides may be used in short courses and treatment can be stopped before the day of the anticipated

2. Young, R. H., and Gilbert, R. P.: The Use of Theophylline with Ethylenediamine (Aminophylline) for the Control of Bronchial Spasm: A Pharmacologic Study, J. Allergy **12**: 235-241 (March) 1941; Use of Aminophylline (Theophylline Ethylenediamine) to Control Bronchial Spasm Induced by Histamine, J. A. M. A. **114**: 522 (Feb. 10) 1940. Dees, Susan C.: The Use of Aminophylline Rectal Suppositories in the Treatment of Bronchial Asthma: Preliminary Report, J. Allergy **14**: 492-494 (Sept.) 1943. Luducña, F. P.: Bronchial Antispasmodic Actions of Theophylline Derivatives, Including Effects of Continued Administration, J. Pharmacol. & Exper. Therap. **75**: 316-327 (July) 1942.

eruption. In many cases ammonium chloride must be used then. Ammonium chloride is best prescribed in sour mixtures [3] in the manner presented in table 2.

Sedatives, Estrogens and Stramonium.—Fear is an important factor in the production of asthma. Severe exhaustion and apprehension coupled with poor nervous stamina will increase the severity of an attack of asthma and will cause an attack to develop on slight provocation. Likewise the loss of sleep brought about by repeated nocturnal attacks of asthma causes profound exhaustion. For such patients small doses of phenobarbital are helpful. Excessive sedation should be avoided, as it is important not to suppress the belabored respiratory center.

For women who have premenstrual tension associated with exacerbation of their asthma, oral use of estrogens during the two weeks before menstruation may be necessary in addition to sedatives. The continuous use of estrogens should be considered particularly for menopausal patients who have ceased menstruating and who have appreciable vasomotor instability.

Use of opiates is mentioned to be condemned. Although they ease the apprehension of the patient, they depress the respiratory center and in doing so place the patient in serious jeopardy of immediate death from respiratory failure. Secondarily the closely associated cough center is suppressed at a time when raising secretions is of utmost importance.

Another commonly used treatment which is mentioned because of its deleterious effect from a long-range point of view is the fumes from burning stramonium powder. Temporary relief is obtained from this treatment, but bronchial irritation produced may cause further asthma at a later date. If the patient has confidence in such treatments, it is a good practice not to deprive one who is seriously ill of this during the first day or so of hospital care. The reason for this is to prevent the fear that withdrawal of such medication would induce.

Special Measures for Patients Who Are Critically Ill.—For critically ill patients such measures as intravenous administration of 1 cc. of 1:1,000 solution of epinephrine in 1 liter of isotonic solution of sodium chloride given very slowly and the use of nikethamide or pentamethylene tetrazol (metrazol) may be necessary. Such measures are employed only when respiratory failure is imminent. They are particularly useful when morphine has been given before the patient has come under observation. With respiratory failure the use of an inhalator will increase the respiratory excursion, and helium and oxygen mixtures should be used for inhalation therapy.

Diet.—In considering a diet for the seriously ill asthmatic patient, foods known to be poorly tolerated by that patient should be omitted. A positive skin test alone is insufficient evidence to warrant the omission of nutritious foods from the diet of a patient. In most cases a general tray may be served. Subsequent modifications of this regimen may be introduced as their necessity becomes apparent. Often a patient with an eye too closely fixed on reactions to skin tests will cause his health to suffer more through bizarre and inadequate diet than it might from the atopic disorders prompting such diets. A light evening meal is preferred to a large meal. Supplements of vitamins which appear indicated in an individual case should be given.

3. Hatcher, R. A., and Wilbert, M. I.: The Pharmacology of Useful Drugs, Chicago, American Medical Association, 1915, p. 327.

COMPLICATIONS

Complications of asthma frequently include bronchostenosis, bronchitis with fever and pneumonia. The role of coexisting bronchostenosis should be suspected if the patient presents a history of recurrent febrile episodes associated with chills, if there is a history of unexplained hemoptysis or if examination of the chest reveals persistent suppression of breath sounds, especially in the bases of the lungs. When any of these characteristic features is present, bronchoscopy is indicated after the acute phase of the asthma has subsided. For bronchitis associated with fever and for pneumonia, sulfonamides or penicillin should be employed early. Because many of these patients have associated emphysema, acute infectious processes represent a considerably greater hazard to the patient.

A useful adjunct in the treatment of asthma in which bronchitis is an important etiologic factor may be had in a roentgen treatment to the bronchi. Opinions that roentgen irradiation may exercise a beneficial effect on the chronically inflamed bronchial mucous membrane are accumulating.[4]

As the patient improves, greater latitude in an evaluation of long-range factors affecting the asthma is possible. An investigation of the allergies involved may be undertaken. The presence of coexisting sinus disease may be determined. If purulent discharge is seen in the nose, if a history of frequent head colds is obtained or if a yellow postnasal drip is noted, sinusitis should be suspected. Roentgenographic examination of the sinuses should be made in all cases of asthma. Active sinusitis should be eradicated by such measures as may prove to be indicated.

TREATMENT AFTER DISMISSAL FROM HOSPITAL

When finally the patient is dismissed from the hospital, it is well to outline a regimen which will include several items: Methods for preparing a dustfree bedroom must be suggested. Dustproof covers should be applied to the mattress and pillows in the patient's home. This is done partly because of allergic factors and partly because dust serves as a respiratory irritant. Caution concerning the irritation from a habit of coughing is at times warranted, although patients who raise quantities of sputum should be spared such admonitions. The use of tobacco is contraindicated in most cases of asthma. The addition of any irritation from tobacco to the bronchitis under treatment had best be avoided. The medication employed to the time of the patient's dismissal from the hospital should be continued without interruption during the transition to home care. This should include expectorant (if tolerated), ephedrine or ephedrine-like drugs and, if epinephrine has been required in quantity, use of nebulized epinephrine. Certain patients should be instructed in the method of administering epinephrine hypodermically. The availability of this form of treatment eases the patient's apprehension.

SUMMARY

We now have at our disposal many tried adjuncts in treatment of the patient who is seriously ill with asthma. While not one of these is of recent introduction, the diligent application of these several measures will materially aid in the care of such a patient.

4. Kaplan, I. I., and Rubenfeld, Sidney: The Treatment of Asthma with the Roentgen Ray, Am. J. Roentgenol. **50**: 791-796 (Dec.) 1943. Hull, W. M.; Balyeat, R. M., and Chont, L. K.: The Therapeutic Value of Roentgen Treatment in Chronic Asthma, ibid. **49**: 227-233 (Feb.) 1943. Maytum, C. K., and Leddy, E. T.: Roentgen Treatment of Severe Asthma, J. Allergy **8**: 66-70 (Nov.) 1936.

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MULTIPLE CASES OF CHORIOMENINGITIS IN AN APARTMENT HARBORING INFECTED MICE

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Many house mice trapped in the homes of choriomeningitis patients are virus carriers [1] and infection in experimental mouse colonies may persist indefinitely, being transmitted from one generation to the next.[2] These observations suggest that a building harboring infected mice could be a persistent source of human disease, and the present report appears to be an instance in which this occurred.

Three cases of choriomeningitis developed among the residents of a multiple family dwelling in Raleigh, N. C., and a fourth case in a near neighbor. All 4 were quite characteristic clinically. The first patient, a woman aged 32, was identified by the development of neutralizing antibodies in her blood serum. The cerebrospinal fluid was avirulent for mice. The following month two house mice were trapped in the building. Their brains were suspended in saline solution and injected intracerebrally into albino mice. Typical convulsions occurred seven days later. The virus was later shown to be serologically indistinguishable from the W. E. strain of choriomeningitis.[3]

Two years later a man aged 31 who also lived in the building developed similar symptoms. In this case virus was demonstrated in the cerebrospinal fluid drawn on the third day of the disease. Antibodies were likewise demonstrated in this case. Twelve months later a woman aged 40 residing in the building had aseptic meningitis. Virus was not found in her cerebrospinal fluid, drawn on the sixth day, but neutralizing antibodies appeared in her blood one month later.

The fourth patient was a boy aged 14 years whose home was in an adjoining building but who frequented the apartment house. Cerebrospinal fluid was drawn on the second day and found to contain virus. At the time his fluid contained 540 cells per cubic millimeter. Two days later the cells had increased to 950 per cubic millimeter.

Unfortunately neither further trapping nor a survey of the residents of the building was feasible. The frequency of infection without clinical signs suggests that many others may have been infected. The experience is similar to that of Farmer and Janeway,[4] who learned from hospital records that the 4 recognized cases of choriomeningitis among Boston Negroes during a period of eight years had all occurred in one district. It was discovered that all had lived within two blocks of one another. In this instance the diagnosis in the 2 earliest cases rested on clinical records. Virus was demonstrated in 1 patient and antibodies in another.

The incidence of infected house mice appears to be variable. Armstrong's [5] estimate for Washington, D. C. is 21.5 per cent, while Yamarat [6] found 4 per cent of the mice he trapped in Boston to be carriers. Between September 1943 and October 1944 we examined 290 mice trapped in Greater New York [7] and found 11, or approximately 4 per cent, to be infected. Eleven rats were examined and all proved to be avirulent. Rats are relatively insusceptible to choriomeningitis and have not been shown to carry virus in nature.[8]

It is worth noting that our results suggest small, persistent foci of infection. The persistence of infection is readily understood from the observations showing in utero transmission.[2] The limited size of the foci probably reflects the circumscribed range of mice.[9] Thus the 11 infected mice we found were in four buildings, one store and three apartments. Three were found in the former during the initial trapping and another eight months later. A number of mice from adjoining buildings were free of virus. A second trapping was also made in an apartment in which a carrier had been found. The second collection likewise yielded an infected mouse.

Mosquitoes,[10] ticks [11] and body lice [12] are capable of harboring choriomeningitis virus. Farmer and Janeway [4] suggested that 1 of their patients might have been infected by a dog, but subsequent studies [13] have so far failed to demonstrate that dogs are carriers. On the other hand, several reports have incriminated house mice.[14]

SUMMARY

Three consecutive cases of choriomeningitis were noted among the residents of a multiple family dwelling which harbored infected mice. A fourth case developed in a near neighbor.

It would seem justifiable to make special efforts to search out colonies of infected mice in the premises of known cases of the disease, both to verify further the causal relationship and to identify what may be a persistent focus of infection.

The incidence of choriomeningitis virus carriage in house mice in Greater New York was found to be approximately 4 per cent.

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3. Dalldorf, G.: The Simultaneous Occurrence of the Viruses of Canine Distemper and Lymphocytic Choriomeningitis, J. Exper. Med. **70**: 19-27, 1939.

4. Farmer, T. W., and Janeway, C. A.: Infections with the Virus of Lymphocytic Choriomeningitis, Medicine **21**: 1-63, 1942.

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6. Yamarat, C.: A Study of Lymphocytic Choriomeningitis, Thesis, Harvard School of Public Health, 1940.

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8. Howitt, Beatrice F., and van Herick, W.: Relationship of the St. Louis and the Western Equine Encephalitic Viruses to Fowl and Mammals in California, J. Infect. Dis. **71**: 179-191, 1942. Kreis, B.: La maladie d'Armstrong (chorio-méningite lymphocytaire): Une nouvelle entité morbide? Thesis, Paris, J. B. Baillière, 1937.

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Clinical Notes, Suggestions and New Instruments

CHRONIC PORPHYRIA

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Porphyria, sometimes referred to by the obsolete term "hematoporphyrinuria," is a disease or a group of diseases associated with an intrinsic or inborn error of porphyrin metabolism. The three types recognized by most authorities[1] are (1) congenital, (2) acute and (3) chronic. Almost all of the reported cases of porphyria have occurred in Europe, and the small number of papers in this country have dealt mainly with the acute type[2] and, to a lesser extent, the congenital type. To our knowledge the only case of chronic porphyria which had been reported in this country proved to be a case of acute porphyria with mental symptoms;[3] hence the object of recording this case.

Nesbitt[2] has suggested that porphyria is not as uncommon as is indicated by the paucity of case reports, and that if attention is focused on this disease more cases will be detected. The historical, chemical and clinical aspects of porphyria have been adequately reviewed in English by other investigators,[4] in whose articles extensive bibliographies may be found. A summarizing table has been prepared to facilitate a discussion of the differentiation of the various types of porphyria. This also gives an isolated clear picture of the clinical symptoms associated with this group of diseases.

Differentiation of Various Types of Porphyria

Type of Porphyria	Duration and Genetics	Type of Excess Porphyrin Excreted	Clinical Symptoms
Congenital	Inherited possibly as a mendelian recessive; may appear early in life; chronic disease	Uroporphyrin I with coproporphyrin I (excreted continuously)	Great photosensitivity and cutaneous manifestations resembling "hydroa estivale" in spring and summer, appearing frequently in childhood; urine burgundy red with brown tinge; teeth and bones discolored by uroporphyrin I
Acute	Inherited as a mendelian dominant; chronic disease	Uroporphyrin III excreted in large amounts chiefly during attacks (reason for designation as acute); smaller amounts of coproporphyrin III or I found occasionally	No photosensitivity, no skin lesions; great variation in clinical picture: symptoms of three main types: 1. Abdominal: severe crampike pain, vomiting and constipation, often with slight fever, hypertension and tachycardia 2. Nervous: symmetrical ascending myelitis (Landry's) sometimes with neuritis 3. Mental: any type of psychic disturbance; urine during attack usually red but may be light straw colored darkening on exposure
Chronic	Chronic disease	Mixtures of coproporphyrin III and I or uroporphyrin I and III	Slight photosensitivity; some skin lesions; abdominal pains and symptoms; it thus resembles congenital porphyria in some respects and acute porphyria in others

The three types of porphyria can be easily differentiated if the following facts are kept in mind. The original classification was based on the fact that in the acute variety the abnormal porphyrin excretion occurred intermittently or only during the acute attack. In the congenital and chronic forms, however, abnormal amounts of porphyrin are excreted continuously. These names are somewhat unfortunate because all three types are chronic diseases.

1. The congenital type is possibly inherited as a mendelian recessive.[5] Uroporphyrin type I is excreted predominantly and the classic clinical symptoms are a sensitivity of the skin to light (blistering resembling hydroa estivale). The teeth and bones are usually discolored with uroporphyrin, and the patients exhibit symptoms characteristic of endocrine disturbances.

2. The acute type of porphyria is inherited as a mendelian dominant[5] and, contrary to its name, is a chronic disease. Uroporphyrin type III is excreted in large amounts in the urine and feces during attacks. There is little or no light sensitivity, but abdominal, neurologic and mental symptoms are common manifestations.

3. Chronic porphyria includes those cases which cannot be classified as either congenital or acute but exhibit the clinical symptoms of both in a milder form. For example, in patients with chronic porphyria the skin is somewhat sensitive to light, and abdominal, nervous or mental symptoms may appear singly or in combination. Patients with this disease usually excrete large amounts of coproporphyrin III or a mixture of III and I, but uroporphyrin I and III have been isolated.[3] No information on the genetics of this type of porphyria could be found.

The attempt to include acute toxic porphyria in the classification[6] is not justified and indicates a superficial concept of the disease. This should be regarded as porphyrinuria caused by certain specific toxic substances or drugs.[5]

REPORT OF CASE

History.—A white woman aged 20, married, a native of Baltimore, was admitted to the West Baltimore General Hospital on Nov. 5, 1944 with the chief complaint of severe generalized abdominal pain with nausea and vomiting. The present illness began on Aug. 1, 1944 while she was visiting her husband at a Marine station in North Carolina. At this time she noticed vesicles which itched intensely on the knuckles of both hands. In the next two weeks this spread half-way up the dorsum of the forearms. One month later vesicles began to appear on her face. A sulfonamide (one tablet four times a day) was taken for one week, starting about September 25. Vitamins A and B_1 were then tried for about one month. Acetylsalicylic acid was taken on numerous occasions, but this drug had been used previously with no untoward reactions. No sleeping tablets were necessary.

Since this medication appeared to be of no value, the patient consulted a dermatologist two weeks prior to admission, again without obtaining relief. Four days prior to admission, because the skin condition had not improved, she was given calcium gluconate intravenously with no noticeable effect. A second injection of calcium gluconate was given two days prior to admission. On the morning just prior to this injection the patient first noticed generalized abdominal pain and nausea. This persisted and was accompanied by vomiting during the twenty-four hours before admission to the hospital. The vomiting was so severe that the patient was able to retain nothing but tea. On the day of admission the patient first

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1. Günther, H.: Die Bedeutung der Hämatoporphyrine in Physiologie und Pathologie, Ergebn. d. allg. Path. u. path. Anat. **20:** 609-764, 1922. Waldenström, Jan: Studies on Porphyria, Acta med. Scandinav., 1937, supp. 82, pp. 1-254. Dobriner and Rhoads.[3] Nesbitt.[2]
2. Nesbitt, Samuel: Acute Porphyria, J. A. M. A. **124:** 286-294 (Jan. 29) 1944.
3. Dobriner, Konrad, and Rhoads, C. P.: The Porphyrins in Health and Disease, Physiol. Rev. **20:** 416-468, 1940.
4. Welcker, M. L.: Medical Progress: The Porphyrins, New England J. Med. **232:** 11-19, 1945. Dobriner and Rhoads.[3] Nesbitt.[2]
5. Dobriner and Rhoads.[3] Nesbitt.[2]
6. Fetter, F.; Humphrey, A. A., and Longenecker, C. R.: Acute Idiopathic Porphyria, U. S. Nav. M. Bull. **43:** 349-352, 1944. Avery, L. W.: Porphyria in Relation to Nervous and Mental Diseases, Dis. Nerv. System **6:** 217-221, 1945.

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noticed urgency and frequency of urination, with much difficulty in initiating the flow.

The family history was noncontributory. No relative had ever shown similar symptoms or exhibited any allergy.

The past history revealed only childhood diseases, such as chickenpox, measles, whooping cough and the mumps. The patient worked in a paint factory handling titanium dioxide and later in 1943-1944 in a factory where she used a chemical called "glypthol" to solder tops on metal tubes. This so-called solder is a plastic and contains no lead, benzene or other known toxic material.

A review of the symptoms was noncontributory. No history of asthma, hay fever, food or drug allergy was obtained. There were no previous urinary symptoms.

Physical Examination.—On admission the rectal temperature was 100.4 F., the pulse rate was 90, the respiratory rate was 20, the blood pressure 120/80 and the weight 112 pounds (51 Kg.). The patient appeared to be well developed and well nourished and looked acutely ill. The respirations were full but quite deep in character. The lips appeared red. There was a skin eruption consisting of a few unbroken vesicles with mostly excoriations, superimposed pustules and crusts over the dorsum of the forearms and hands, the face, the forehead and the anterior part of the neck. The remainder of her body was unaffected. Examination of the abdomen revealed a diffuse extreme tenderness but no spasm or rigidity. There was no rebound tenderness, and no organs or masses were palpable. There was no costovertebral angle tenderness or tenderness on percussion over or alongside the spinal column. A complete neurologic examination was negative. Pelvic and rectal examinations revealed no abnormality.

Course in Hospital.—The patient was believed at first to have a virus infection involving the nerve roots and a skin eruption of unknown etiology limited to the exposed areas. A plasma carbon dioxide was found to be 40 volumes per cent and sodium r-lactate was administered parenterally. The normal menstrual flow started two days after admission and the abdominal cramps and urinary urgency, although still present at that time, had subsided considerably. The flow stopped four days after its onset. However, three days later the patient had a small amount of vaginal bleeding.

Spectroscopic examination of a twenty-four hour specimen of the patient's urine on the third hospital day revealed absorption bands characteristic of porphyrin, and 1,635 micrograms of ether-soluble porphyrin was extracted. The urine collected the following day yielded 1,248 micrograms of porphyrin.

The following therapy was then instituted: The patient was given calcium lactate 40 grains (2.6 Gm.), sodium bicarbonate 80 grains (5.2 Gm.) and riboflavin 40 mg. by mouth daily. One fourth of this daily dose was administered with 200 cc. of an imperial drink every six hours. In addition, one ampule of Solu B was given intravenously [7] and 5 cc. of crude liver extract was administered intramuscularly daily. This treatment was suggested by a review [8] of methods used to treat porphyria patients, but the dosages which were used in this case were much higher than those used by other investigators. The riboflavin was thus used as a drug and not to satisfy the normal requirement. The urinary porphyrin excretion was followed for the next twelve days and found to vary between 300 and 1,045 micrograms per day.

During the first four weeks in the hospital the patient required isonipecaine or codeine at least one or more times a day (less terminally than initially) for relief of severe abdominal cramps. By the ninth hospital day the patient became almost free from urinary urgency, but on that day she experienced an especially severe attack of abdominal cramps, made worse by pressure on the abdomen. She also complained of severe pain in the right sacroiliac region and diffuse leg aches which were not relieved by 1 grain (0.06 Gm.) of codeine administered hypodermically but were relieved by 100 mg. of isonipecaine.

7. Major crystallized vitamin B components, consisting of thiamine hydrochloride 10 mg., riboflavin 10 mg., pyridoxine hydrochloride 5 mg., calcium pantothenate 50 mg. and nicotinamide 250 mg.

8. Vannotti, A.: Porphyrine und Porphyrinkrankheiten, Berlin, Julius Springer, 1937.

Ultraviolet radiation was applied on the ninth hospital day to a clear area the size of a quarter (24 mm.) on the dorsum of the right forearm in order to see if the patient was sensitive to this radiation. The unfiltered radiation from a therapeutic quartz mercury arc lamp at a distance of 2 feet was applied for ten minutes, but no skin lesions resulted. This dosage of light may have been too small to elicit a response. The apparent lack of light sensitivity seemed incompatible with the observation that all skin lesions occurred on areas normally exposed to light.

By the tenth day the abdominal and right back pains were present only at intervals, and two days later she was able to sleep about half the night without any pain.

The patient was examined under near ultraviolet light,[9] and about half of the skin lesions exhibited a bright reddish orange fluorescent glow. This red fluorescent glow was especially noticeable on the most recent lesions and more noticeable on those which had been weeping during the previous twenty-four hours. Along the nasolabial grooves, the sebaceous secretions

Fig. 1.—Appearance of patient with chronic porphyria one year after the onset of the disease. Most of the lesions which appear dark in this and in figure 2 were red fluorescent when examined in near ultraviolet light. Many of the scarred areas do not show in the illustrations. The slight enlargement of the thyroid which is evident developed after the patient became pregnant.

stood out as pearly, round, bright orange-red fluorescent puncta. The tongue also showed a brilliant red fluorescence over its entire surface. The skin, mucous membranes, teeth and nails fluoresced normally. The patient suffered no new skin lesions immediately after this fluorescence examination, but several days later three new skin vesicles were noted on the dorsum of the hands. At this time the abdominal pains were of shorter duration and much less severe but usually appeared with low back pain in the evenings. The urinary urgency and leg pains disappeared at this time and never recurred. In the next three days the patient had only two minor episodes of abdominal pain, and she was permitted up in a wheel chair on the fiftieth hospital day. Up until this time there had been no itching of the skin lesions. However, it was now noted that the patient had scratched her forearms while asleep. From this time until her discharge on the sixty-third hospital day the patient was asympto-

9. Figge, F. H. J.: Near-Ultraviolet Rays and Fluorescence Phenomena as Aids to Discovery and Diagnosis in Medicine, Bull. School Med. Univ. Maryland **26**: 165-176, 1942.

matic except for the appearance of new itching skin vesicles about every other day on the face and dorsum of her hands. At the time of her discharge from the hospital her condition was much improved. The medication mentioned earlier has been maintained since discharge with only slight interruption. The Solu B injections were, however, reduced from one a day to only two a week and finally to one a week.

Laboratory and X-Ray Findings.—Examination of the blood on admission showed a red cell count of 4,010,000 with 79 per cent of hemoglobin and a white cell count of 7,500 with 60 per cent neutrophils and 40 per cent lymphocytes. This was repeated a week later with similar results. The plasma carbon dioxide combining power on admission was 40 volumes per cent. The blood cholesterol was 230 mg. per hundred cubic centimeters. The icterus index on admission was 11 and the direct van den Bergh was negative, while the indirect showed a slight trace. Two days later a repeat icterus index was 8.3. A sulfobromophthalein liver function test was done every two weeks between November 1944 and April 1945. The initial sulfobromophthalein test revealed 20 per cent retention with 5 mg. of the dye per kilogram of body weight, a blood sample being withdrawn in forty-five minutes. In the following two months this dropped gradually to a 2 per cent retention but jumped two weeks later,

Fig. 2.—Lesions on arms.

after discharge from the hospital, to 32 per cent. Within two more months this had again dropped to 2 per cent. The cephalin flocculation, galactose tolerance test, total protein and albumin-globulin ratio, serum calcium, phosphorus and alkaline phosphatase values were normal. Urinalysis was negative at all times. The spinal fluid showed no abnormalities.

X-ray studies of the gastrointestinal tract during a period of moderate abdominal cramps revealed much of the barium in the upper half of the small intestine on the five minute film. The upper part of the small intestine was hypermotile especially around the pyloric area and the jejunum. The remainder of the intestinal tract showed sluggish motility with barium in the lower small intestine at the end of eight hours. At twenty-eight hours all of the barium was in the ascending and right half of the transverse colon, where it appeared to be stopped by spasm. A barium enema was given while the patient was entirely free from abdominal pain and revealed no abnormality.

ISOLATION, DETERMINATION AND IDENTIFICATION OF PORPHYRIN EXCRETED IN URINE

The urine collected over twenty-four hour periods was reddish brown, and the porphyrin could be detected spectroscopically but not by fluorescence in near ultraviolet light. Definite absorption bands could be observed at 6,140, 5,730 and 5,350 angstroms. The red fluorescence of the porphyrin in the urine was not apparent because of the presence of an abundance of substances that were so intensely blue fluorescent that they suppressed the weaker red fluorescence. Dobriner's methods [3] of extraction of urinary porphyrins were used with minor modifications. The porphyrin was separated from the urine by adsorption on the precipitate which forms when sodium hydroxide and calcium chloride are added to the urine. After filtration this precipitate containing the porphyrins was dissolved in hydrochloric acid and adjusted to p_H 2.7-3.0 or until neutral to congo red. The main fraction of the porphyrin was then extracted with ether and further purified by passing back and forth from ether to 10 per cent hydrochloric acid and finally into 25 per cent hydrochloric acid. Spectroscopic examination revealed that the absorption bands of this ether-soluble porphyrin in ether and in 25 per cent hydrochloric acid coincided with the known values for coproporphyrin [10] and with the absorption bands of a sample of synthetic coproporphyrin. The fact that it was soluble in 20 per cent sodium hydroxide also indicated that the predominant porphyrin was coproporphyrin. These ether-soluble fractions, representing the total urine collected over a period of fourteen days, were pooled and further purified and fractionated to determine the melting points of the methyl esters.

The neutralized aqueous solutions that had been extracted with ether were examined spectroscopically for uroporphyrin. In some of these it was thought that the absorption bands of uroporphyrin could be detected. However, the position of the absorption bands of uroporphyrin and coproporphyrin are so similar that absorption spectrums cannot be relied on to differentiate these two pigments. Careful extraction of these aqueous solutions with more ether removed additional small amounts of coproporphyrin. No definite evidence indicating the presence of uroporphyrin was obtained.

The ether-soluble porphyrins which had been isolated as described were pooled and converted to their methyl esters by the conventional methanol-hydrochloric acid procedure. Considerable material was lost in unsuccessful attempts to separate the methyl esters of the isomeric coproporphyrins I and III by the anhydrous ether method of Rimington [11] and by adsorption on alumina. Using anhydrous methanol as recommended by Dobriner,[12] the alcohol insoluble fraction yielded a substance melting at 235-238 C. This corresponds to the values reported in the literature [3] for the melting point of the methyl ester of coproporphyrin I isolated from natural sources. The pure synthetic ester melts at 248-252 C. The absorption spectrum in chloroform was found to be in agreement with the values given in the literature for coproporphyrin methyl ester. From the methanol soluble fraction there were secured crystals melting at 125-135 C. Repeated attempts to raise the melting point by recrystallizing were not successful, probably because of the small amount of substance available. The pure synthetic ester of coproporphyrin III shows a double melting point at 135 or 142 and 167-170 C. The absorption spectrum of this material in chloroform also agreed with that of the coproporphyrin I methyl ester, leaving little doubt that it was impure coproporphyrin III ester. It was therefore concluded that the patient was excreting a mixture of coproporphyrin III and coproporphyrin I.

Posthospital Record.—The patient has thus far been followed for one year after discharge. For the first four months she had biweekly sulfobromophthalein liver function tests which varied between 2 and 32 per cent retention. She continued to be free from gastrointestinal symptoms until three and one-half months after her hospital discharge, when she experienced a moderately severe continuous pain in the entire left abdomen lasting over twelve hours. She slept well but awakened in the morning with a somewhat milder pain in the right lower quadrant lasting half a day. This was followed by intermittent epigastric pains which disappeared entirely by bedtime. After this there was no recurrence of abdominal pain; however, there was a bloated feeling accompanied by a meager appetite for a week. There was no nausea, vomiting or bladder difficulty at any time after the patient's discharge from the hospital. For the first six months following discharge the patient experi-

10. Fischer, H., and Orth, H.: Die Chemie des Pyrrols, Leipzig, Akademische Verlagsgesellschaft m. b. H., 1937, vol. 2, pt. 1, p. 764.
11. Rimington, C., and Hemmings, A. W.: Sulfanilamide Porphyrinuria, Biochem. J. **33**: 960-977, 1939.
12. Dobriner, Konrad: Porphyrin Excretion in the Feces in Normal and Pathological Condition, J. Biol. Chem. **120**: 115-127, 1937.

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enced no new skin lesions on her face, neck or legs. The old lesions had healed and had left almost undetectable pockmarks. On her forearms and hands she was not so fortunate, however, and new lesions appeared sporadically except for a period of two weeks, when the patient wore a long-sleeved dress and gloves. During June 1945 she developed numerous new vesicles on the hands and arms in spite of trying to protect the exposed areas with gloves.

The patient had been advised to avoid becoming pregnant because of the uncertain influence that this might have on the prognosis and because the other types of porphyria appear to be inheritable. In June 1945 it was discovered, however, that she had become pregnant approximately two months previously. By this time she had improved to such a degree that the discontinuance of the Solu B and liver injections was contemplated and tried for one month. Either because of this discontinuance of treatment or for other reasons, the patient became much worse and a therapeutic abortion was contemplated but not carried out. There appeared to be no record of a similar case of chronic porphyria complicated by pregnancy. The Solu B and liver injections were therefore started again. At this writing the patient has been pregnant for six months and is feeling relatively well. The skin lesions continue to appear, however, on the legs and arms and sometimes on the face. They become secondarily infected from scratching and heal slowly. An attempt is being made at present to treat these with penicillin applied locally and ointments containing local anesthetics. Examination of the urine fourteen months after the onset of the disease reveals that large quantities of porphyrin are still being excreted.

COMMENT

The initial diagnosis of porphyria in this instance was made on the basis of skin lesions limited to exposed areas and the reddish brown urine which, when examined, was found to contain relatively large amounts of porphyrin. The specific diagnosis of chronic porphyria was, however, based on these facts. The clinical symptoms (severe generalized abdominal pain along with skin lesions on exposed areas) did not coincide with those observed in either congenital or acute but resembled those of both types of porphyria. When the porphyrin excreted in this case was finally isolated and identified by means of the melting point, spectroscopic examination and solubility tests, it was found to be a mixture of coproporphyrin III and coproporphyrin I. This again would not be characteristic of either congenital porphyria, in which uroporphyrin I is excreted, or of acute porphyhia, in which uroporphyrin III predominates in the urine. The excretion of excessive amounts of coproporphyrin in the urine has continued unabated for over one year, during which time the patient has been isolated from possible toxic agents in factories or at home. This has ruled out the possibility that the disease was only a severe porphyrinuria of toxic origin.

It is true that predisposing factors or the disease in a latent form may have existed in this patient at birth but were set off at the age of 20 years by one of the following factors: 1. Work in a factory environment containing some allergen or other agents such as titanium dioxide or plastic solvents that were specifically toxic to the patient. 2. The administration of a sulfonamide drug. The skin lesions were present before any drugs were given, so that there is good reason to believe that the porphyria existed before the sulfonamide drug was taken. Since, however, the patient was not under our observation at this stage of the disease and no urinary porphyrin determinations were made prior to the administration of the sulfonamide drug, we cannot rule out the possibility that this was responsible for starting the excretion of excess porphyrins.[13] The continued excretion of porphyrin for over a year after the discontinuance of the sulfonamide also makes such a hypothesis untenable. In some experiments in which sulfonamides were administered to a group of over 1,000 mice, 3 of the 4 siblings in one litter developed porphyria so severe that the teeth and bones became red fluorescent.[14] Attempts to repeat this have been unsuccessful.

13. Figge, F. H. J.; Carey, T. N., and Weiland, G. S.: To be published. Dobriner and Rhoads.[3] Rimington and Hemmings.[11]
14. Figge, F. H. J.: Unpublished data.

For some time after the treatment was started, skin lesions continued to appear on the legs, ankles and hands of the patient, but none appeared on the face. This was perplexing because the face was apparently exposed to as much light as the hands and ankles. More recently, however, new lesions appeared on the face in spite of the fact that an attempt has been made to keep exposure to sunlight to a minimum. Application of suntan lotions likewise failed to prevent the appearance of some skin lesions.

The treatment in this case seems to alleviate the most distressing symptoms but does not prevent either the photosensitivity or the increased porphyrin excretion. Recently the vitamin C intake of the patient has been increased to 400 mg. per day. Vitamin C therapy was originally suggested by Dobriner.[15]

SUMMARY

Chronic porphyria, a disease associated with an inborn error of porphyrin metabolism, was observed in a woman aged 20. In this case the outstanding symptoms were the severe generalized abdominal pain associated with red fluorescent skin lesions on exposed areas. The patient has excreted 300 to 1,600 micrograms of coproporphyrin I and III daily for over one year. Porphyria is probably not as rare as the reports of cases would lead one to believe and should be kept in mind when considering cases with mental, cutaneous, neurologic or abdominal symptoms.

COMMON DUCT STONE RELIEVED BY INJECTION OF NUPERCAINE SOLUTION INTO T TUBE

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The management of a persistent common duct stone following cholecystectomy and choledochostomy is a particularly vexing problem to the surgeon, for it frequently demands further operative intervention and, at the least, prolongs the period of convalescence. Several methods of removing these stones have been advanced, among them the systemic and local (intraduodenal) use of autonomic drugs,[1] the use of nitrites,[2] various regimens involving flushing through the T tube and the so-called "physiologic flush" of Best,[3] which includes the administration of the nitrites, antispasmodics, bile salts and fatty foods as well as direct T tube irrigation. Ether,[4] chloroform [5] and recently "solution G," [6] containing citric acid, have all been employed in an attempt to dissolve or dislodge the stones.

The presence of a stone in the duct causes a reflex spasm of the sphincters of Boyden and Oddi;[7] likewise there has been noted the production of a traumatic cholangitis with mucosal edema, both of which phenomena tend to grasp the stone more firmly and to maintain the obstruction.

In a case of this type, in which the presence of a persistent stone had been established postoperatively by cholangiography and all accepted methods had failed to dislodge it, it was suggested by Dr. Ralph Rabinowitz, internist, that a method

15. Dobriner, Konrad: Simultaneous Excretion of Coproporphyrin I and III in a Case of Chronic Porphyria, Proc. Soc. Exper. Biol. & Med. **35**: 175-176, 1936.

From the Department of Surgery, Mount Zion Hospital.

1. Butsch, W. L.; McGowan, J. M., and Walters, W.: Clinical Studies on the Influence of Certain Drugs in Relation to Biliary Pain and to Variations in Intrabiliary Pressure, Surg. Gynec. & Obst. **63**: 451-456, 1936. Necheles, H.; Olson, W. H.; Neuwelt, F., and Spier, E.: A Pharmacological and Clinical Study of Spasmolytic Drugs, Gastroenterology **2**: 46-59, 1944.

2. McGowan, J. M.; Butsch, W. L., and Walters, W.: The Use of Glyceryl Trinitrite for the Control of Pain Following Cholecystectomy, Ann. Surg. **104**: 1013-1018, 1936.

3. Best, R. R.: A Physiologic Biliary Flush in the Management of Biliary Tract Disease, Southwest. Med. **23**: 396-399, 1939.

4. Probstein, J. G., and Eckert, C. T.: Injection of Ether into the Biliary Tract as a Treatment for Choledocholithiasis, Arch. Surg. **35**: 258-267 (Aug.) 1937.

5. Narat, J. K., and Cipolla, A. F.: Fragmentation and Dissolution of Gallstones by Chloroform, Arch. Surg. **51**: 51-56 (July-Aug.) 1945.

6. Goldman, B.; Jackman, J., and Eastman, R. H.: The Management of Postoperative Choledocholithiasis: Another Use for Solution G, Surg., Gynec. & Obst. **81**: 521-524, 1945.

7. Boyden, E. A.: The Physiology of the Sphincter Choledochus, Anat. Rec. (supp.) **64**: 7, 1936. Snell, A. M.; McGowan, J. M., and Butsch, W. L.: Colics Following Cholecystectomy: Probable Mechanism of Their Production (Role of Spastic Contraction of the Sphincter of Oddi with Secondary Rise of Pressure in Bile Ducts), Rhode Island M. J. **19**: 113-119, 1936.

might be employed which arrests the spastic reflex at its receptor end and permits the stone to be dislodged, either through the tube or through the relaxed sphincters. It was decided to use a nontoxic, topical anesthetic agent to achieve this effect. The urologists have long used such agents [8] in the urinary tract, not only to diminish subjective unpleasantness during instrumentation, but to reduce spasm of the smooth muscle in cases of inflammation (e. g. urethritis, bladder stone). One of the solutions most widely used has been nupercaine in a concentration of 1:1,000 to 1:500. No record of its use in the common duct has been encountered.

REPORT OF CASE

A white man aged 49, a physician, had a long history of right upper quadrant pain associated with the presence of a palpable mass in that region, nausea and vomiting. His icterus index at the time of admission was 26 units. At operation an acutely diseased gallbladder was found, and exploration of the common duct revealed many gravel-like stones. A T tube was placed in the duct following removal of the gallbladder.

Postoperatively the course was marked by attacks of pain in the right upper quadrant whenever the T tube was clamped or when more than 8 or 10 cc. of saline solution was instilled into it. Referral of pain to the substernal region was likewise noted. The saline solution was always returned bile stained, indicating that it did not go through the sphincter. Stools were consistently clay colored. Cholangiograms which were taken on the thirteenth and nineteenth postoperative days (fig. 1) revealed an absolute block at the sphincter of Oddi, with the presence of a curved shadow in this region suggesting a nonopaque stone. Despite several days of treatment with the Best regimen (nitrites, antispasmodics and bile salts, with oil and saline irrigations of the tube) there was no progress made in dislodging the obstruction.

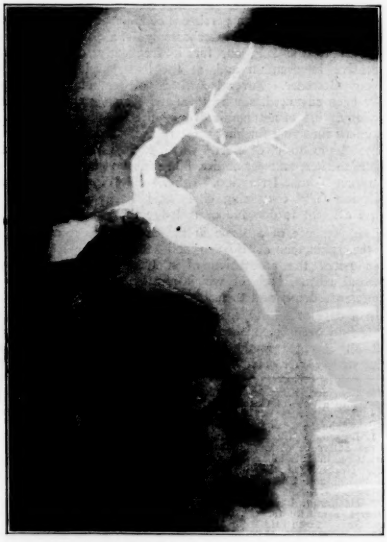

Fig. 1.—Cholangiogram taken on the nineteenth postoperative day after unsuccessful attempts to relieve the obstruction by frequent irrigations and by the Best regimen.

On the twentieth postoperative day approximately 10 cc. of sterile nupercaine solution in a strength of 1:500 was instilled into the tube, which was then clamped for twelve minutes, following which the tube was again gently irrigated with warm saline solution, 50 cc. of which was instilled without evidence of the pain which had regularly occurred following the administration of only 8 or 10 cc. On the basis of the subjective relief of the patient, and because the injected fluid could no longer be reaspirated from the tube, it became evident that the obstruction was no longer present, and this was confirmed by a cholangiogram taken a few hours later (fig. 2). With the finding of a completely patent common duct it was possible to remove the T tube, and after a progressively improving hospital course the patient was discharged in good condition.

Fig. 2.—Cholangiogram taken after instillation of nupercaine solution into duct, showing complete disappearance of obstruction and free flow of dye into duodenum.

COMMENT

Relief experienced by the patient after the instillation of the anesthetic solution into the common duct as well as the ease with which the irrigation of saline solution passed through the duct into the duodenum, compared with previous attempts, makes us feel certain that the anesthetic solution was the responsible factor. Although it is hoped to confirm these findings later with experimental work on animals, it was thought that this case report should be submitted so that other surgeons might try this harmless method clinically.

It is also suggested that a topical anesthetic solution, such as nupercaine, be used by surgeons during the operative exploration of the common duct. The instillation of such a solution should relax the sphincter of Oddi and allow an easy, nontraumatic dilatation.

SUMMARY

1. A new method has been developed for the treatment of persistent postoperative common duct stones.

2. Based on the premise that these stones cause a reflex spasm of the sphincters, an attempt has been made to arrest this reflex at its receptor end by the instillation of a topical anesthetic solution (nupercaine 1:500) directly into the common duct.

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8. Ockerblad, N. F., and Carlson, H. E.: Nupercaine—Its Place in Urologic Practice, J. Missouri M. A. **36**: 120-122, 1939.

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Special Article

OFFICIAL STATEMENT CONCERNING STREPTOMYCIN

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Many recent publications describing the effects of streptomycin have created so much interest and so many demands for it that the medical profession and public should be informed of the arrangements now in effect to adjust the present very limited supply to a program of clinical investigation.

The Committee on Chemotherapeutics and Other Agents of the National Research Council, at the request of the Civilian Production Administration and the Streptomycin Producers Advisory Committee, is supervising an investigation of the clinical usefulness and possible toxicity of streptomycin. The primary interest of the committee in streptomycin is to determine its effectiveness and toxicity in certain infections which are not susceptible to treatment with sulfonamides, penicillin and other therapeutic agents.

The introduction of streptomycin to the medical profession is so recent that much remains to be learned concerning limitations of its usefulness, methods of administration, dosage, toxicity, and so on. Most of the information obtained so far has issued from military and civilian hospitals as a result of clinical investigations which have been carried out under arrangements between producers of streptomycin and individual clinical investigators. Similar studies are being continued and amplified by the Committee on Chemotherapeutics and Other Agents of the National Research Council, and a fraction of the streptomycin is now being allocated to the committee for these purposes. It is placed in charge of the chairman for distribution to those hospital physicians most competent to obtain the vitally needed information.

In addition to the group of accredited investigators, individual physicians have been included in the research program when they have patients with diseases which are being studied by the committee. Full information concerning the bacteriologic diagnosis of the case is required, and when streptomycin is allotted it is with the understanding that a full report of the case is to be returned to the committee for analysis and that all unused material is to be returned for use in other suitable cases.

Because of the restricted supply of streptomycin, it is obvious that patients selected to receive it must be those whom it can be expected to benefit and from whose treatment useful, needed information can be derived. Under present conditions many requests will inevitably have to be refused.

Following is a list of the diseases which are under investigation, together with a list of those which are not being investigated:

DISEASES WHICH ARE TO BE INVESTIGATED WITH STREPTOMYCIN UNDER THE COMMITTEE

1. Gram negative bacillary infections of the genitourinary tract resistant to the sulfonamides.
2. Gram negative bacillary infections with bacteremia.
3. Hemophilus influenzae infections, including meningitis, pneumonia, middle ear disease and laryngotracheitis.
4. Friedländer's bacillus (Klebsiella pneumoniae) pneumonia.
5. Typhoid.
6. Salmonella infections (paratyphoid).
7. Acute brucellosis with bacteremia.
8. Tularemia.
9. Bacterial endocarditis due to gram negative bacilli.

DISEASES WHICH ARE NOT BEING INVESTIGATED BY THE COMMITTEE AT PRESENT

1. Chronic idiopathic ulcerative colitis.
2. Lupus erythematosis acutus disseminatus.
3. Leukemia.
4. Cancer.
5. Fever of unknown cause.
6. Rheumatic fever.
7. Rheumatoid arthritis.

TUBERCULOSIS

For the present only those cases of tuberculosis which were already under treatment prior to March 1, 1946 are being studied. A broader program for the study of tuberculosis is planned, but it cannot be undertaken at the present time because of inadequate supplies of streptomycin. It is the hope of the Committee on Chemotherapeutics and Other Agents to explore this problem further. The medical profession will be kept informed of developments.

PROCUREMENT AND ALLOCATION OF STREPTOMYCIN

All streptomycin now being produced must be reported to the Civilian Production Administration for allocation by it. Allocations are made to the Army, Navy, U. S. Public Health Service, Veterans Administration and the National Research Council after discussion of the needs of each and adjustment of the available supply to those needs.

No one other than the agencies named may purchase streptomycin. No patient who receives it may pay for it. No physician is charged for it.

The present program of clinical research is being conducted by the concerted efforts of the government, streptomycin producers, the National Research Council and civilian medical scientists of the highest standing with the sole purpose of obtaining the necessary information concerning streptomycin in the shortest possible time. The program of the National Research Council is being supported by grants in aid from eleven pharmaceutical and chemical companies.

MEMBERS OF COMMITTEE

The members of the committee are:

Chester S. Keefer, Chairman, 65 East Newton Street, Boston,

John S. Lockwood, Secretary, Yale University School of Medicine, New Haven, Conn.,

E. K. Marshall Jr., Johns Hopkins University School of Medicine, Baltimore,

Francis G. Blake, Yale University School of Medicine, New Haven, Conn.,

Perrin H. Long, Johns Hopkins University School of Medicine, Baltimore,

W. Barry Wood Jr., 600 South Kingshighway, St. Louis.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 4, 1946

ORAL BASAL TEMPERATURES AND OVULATION

Van de Velde's observation as to the existence of variations in body temperature during phases of the menstrual cycle has been confirmed by a number of observers.[1] Rubenstein correlated his study of vaginal smears with a study of basal temperatures; he found that during the phase of follicle development the basal rectal temperature tends to drop progressively. The low point in the temperature is reached when the follicle matures. The diphasic character of the menstrual cycle in normal women was confirmed by a number of observers, among them Palmer,[2] who believes that rises and falls in the body temperatures of normal menstruating women are brought about in some way by the activity of the two types of hormones, estrogens and progestogens, elaborated by the ovary. Palmer states that diagnosis of pregnancy may be made from a patient's basal body temperature as early as it can be made from other signs, symptoms or tests, if not earlier. Sterility apparently due to improper timing of coitus may be overcome if use is made of the basal body temperature record.

Tompkins[3] advocated a wider clinical application of the method of detection of the date of ovulation through basal temperature graphs. He likewise points out that the temperature is relatively low during the first part of the month, drops to a minimum about the time at which ovulation occurs and rises definitely thereafter to a relatively high level, which is maintained until the next menses, when the temperature drops abruptly. Such temperature fluctuations are not found before the menarche, after the menopause or in men. If conception occurs, the temperature will remain at the high postovulation level. Tompkins has developed a special form printed on grid paper for the recording of daily basal temperatures. He believes that with the aid of these graphs it will be possible frequently to indicate the date of ovulation.

In a study of 500 patients whose basal temperature graphs have been collected during the past two years, Davis[4] reemphasized recently in THE JOURNAL the value of basal temperatures in the clinical interpretation of ovarian physiology. Davis urges the substitution of oral temperatures for the record of rectal and vaginal temperatures in use now. These temperature observations have been correlated with a study of vaginal smears, endometrial biopsies and operative material. Basal temperatures were found to be reliable indexes of ovarian activity in at least 3 out of 4 women. In the remaining 1 the curve is so atypical that no accurate interpretation of physiologic changes can be made. The temperature drops twenty-four to thirty-six hours before the onset of bleeding, reaching a low level during the first day or two after the onset of the menses. Davis believes that the rise in the temperature is brought about by ovulation and that the elevated basal temperatures are maintained by the corpus luteum activity. Persistence of the elevated temperature during pregnancy would add weight to this interpretation. When pregnancy occurs the basal temperature remains at the postovulatory level during the first few months of the gestation. Davis feels that a basal temperature curve should be a part of every study of sterility. This is the simplest technic for ascertaining ovarian activity and dating ovulation. The persistence of the postovulatory elevated temperature in the event of conception constitutes the most accurate early data concerning pregnancy. Temperature curves can be used as contraceptive aids.

1. Temperature Recording for Female Fecundity, editorial, J. A. M. A. **130:** 412 (Feb. 16) 1946. Basal Temperature and Date of Ovulation, ibid. **124:** 707 (March 11) 1944.
2. Palmer, Allan: Basal Body Temperature in Disorders of Ovarian Function and Pregnancy, Surg., Gynec. & Obst. **75:** 768 (Dec.) 1942.
3. Tompkins, Pendleton: The Use of Basal Temperature Graphs in Determining the Date of Ovulation, J. A. M. A. **124:** 698 (March 11) 1944.
4. Davis, M. E.: The Clinical Use of Oral Basal Temperatures, J. A. M. A. **130:** 929 (April 6) 1946.

THE AMERICAN ACADEMY OF PEDIATRICS STUDY OF CHILD HEALTH SERVICES

Under the auspices of the American Academy of Pediatrics a study of child health services is now being conducted throughout the United States. This study is being made under the control of physicians. The Academy of Pediatrics has contributed substantial sums from its reserve funds and has obtained contributions from other sources to finance its work. The U. S. Public Health Service and the Children's Bureau are supporting this survey with assigned personnel to assist in the accumulation and statistical analysis of the data. A considerable grant was also made for a two year period by the National Foundation for Infantile Paralysis because of the special interest of that foundation in diseases affecting children, their hospitalization and their medical care.

The study arose from a belief of the American Academy of Pediatrics that we must have scientific planning to meet the needs of children in the postwar

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period and that the responsibility for such planning rests on physicians themselves. The study includes services of hospital facilities, community health services, distribution, qualification and activities of professional personnel and pediatric education. The survey will supply a collection of factual data to be used as the basis for recommendations leading to a long term program for the medical and health care of the child. Since those who are making the study will depend largely on the medical profession and particularly on pediatricians for the assembling of data and for opinions as to the quality of medical services available, THE JOURNAL would urge every physician who can render aid in this project to do everything possible to facilitate the accumulation of data. No similar study of health services for children has ever been conducted on a national level. Preliminary tests were made in North Carolina which led to the development of the forms by which data will be assembled.

At the completion of the study a factual report will be prepared and made available to all who may be concerned with planning in the field of child care. Thus it will concern particularly legislative programs both on a national and on a state level. In several states activities are already well under way toward completion of the project. A manual for state chairmen and executive secretaries has been developed and a considerable staff is devoting full time to this work. The office of the survey is 7950 Rockville Pike (Bethesda Station), Washington 14, D. C. The director is Dr. John P. Hubbard, formerly a member of the staff of the Children's Hospital in Boston.

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FACTORS OF SAFETY IN THE HUMAN BODY

In engineering the term "factors of safety" means the margin required in the building of engines or bridges to cover any contingency that may arise in the form of unusual stress or strain. The term was introduced into medical literature by the late Samuel J. Meltzer. He suggested the doctrine that the human body is constructed with special consideration for the greatest degree of safety rather than for the greatest economy. Circumstances may develop, however, in which factors of safety are resolved into elements of peril by processes so subtle that the body is warned of danger only when restitution is impossible. For example, one kidney may be removed with impunity if the other is normal and the amount and composition of the urine under the changed regimen remain practically unaltered. This means, of course, that the kidney has an amount of excess tissue which is sufficient on short notice to take on at least twice the total of work to which the organ is ordinarily accustomed. In addition, experiment reveals that at least two thirds of the available kidney tissue in the body may be removed without detriment to function. In both instances it is the remaining glomerulus with its tubular extension which constitutes the factor of safety. In the compensating kidney the glomeruli enlarge, sometimes in such manner as to stretch their limiting membranes, and the tubules increase in caliber. The glomerulus is then in a position to receive a larger supply of blood, and the tubule is prepared to accommodate reasonable increase in the output of fluid. In certain conditions of disease the glomeruli by thousands are partially or completely replaced by overgrowth of the epithelium of Bowman's capsule or by fibrous tissue or by amyloid deposits. Many of the remaining glomeruli enlarge and, within limits, compensate for those which have been injured or destroyed. Beyond these limits compensation fails and the patient begins to show signs of renal disturbances, indicating that anatomic factors of safety have been disposed of in numbers sufficient to damage the organ irreparably—insidiously and without warning, factors of safety have been converted into elements of peril.

Factors of safety are present in the heart, both in the endocardium and in the muscle tissue. The valves, notably the aortic and pulmonary cusps, are provided with an amount of tissue which is more than that needed at any one time. On the aortic and pulmonary valves above the lines of closure are semilunar sheets of endocardium which are almost precisely the same size as that of the valvular endocardium below the lines of closure, so that the valves contain about twice as much tissue as is needed to prevent leakage. When certain disease processes attack the valves along and below the lines of closure, causing retraction, the endocardium above the lines of closure is automatically drawn down to take the place of the retracted part. This mechanism makes it possible for heart valves thus fortified to undergo extensive sclerotic changes and still remain functionally intact. However, a time comes when the process of retraction assumes the ascendancy and at that moment the valve becomes incompetent. Similarly, anatomic factors of safety are inherent in the heart muscle, lungs, liver, pancreas, adrenal capsules, skin and elsewhere.

In the human body certain cells are set apart for purposes of regeneration necessitated by natural attrition, especially those of the lowermost layer of the skin, the germinal follicles in the lymph nodes and the hemopoietic bone marrow. As long as growth control is under proper restraint, these cells reproduce and differentiate, function and are discarded. But the process of reproduction is a potential menace because cells are often manufactured in excess of those needed to meet physiologic requisites. In certain tissues not only is the supply of new cells excessive but the new cells, at least according to one view, assume a type of architecture in which equilibrium between structure and function is unstable and growth may progress beyond control, a tumor resulting. In this way, again, factors of safety are converted into elements of danger.

Current Comment

DISTRIBUTION OF STREPTOMYCIN

Elsewhere in this issue (page 31) appears an official statement concerning streptomycin, prepared by Dr. Chester S. Keefer, chairman of the Committee on Chemotherapeutics and Other Agents of the National Research Council. As pointed out by Dr. Keefer, introduction of streptomycin is so recent that much still has to be learned of the limitations, usefulness, methods of administration, dosage, toxicity and other aspects of the therapeutic use of this antibiotic. Supplies are restricted, so that distribution of what is available must be carried out with the object of accumulating important information in the most efficient manner possible. Dr. Keefer points out that many requests for the drug will have to be denied because patients selected to receive it must be those most likely to benefit. Physicians realize that in the circumstances a technic for the most equitable usage of the available supplies of streptomycin had to be established and will continue to be patient until the supplies are more adequate and the therapeutic indications are more clearly elucidated.

PHYSIATRIST

Now that the term "physical medicine" has replaced the designation physical therapy and has been generally accepted throughout the United States, a one word term is needed to designate the physician who specializes in this field. There now exist the Council on Physical Medicine of the American Medical Association, the American Congress of Physical Medicine and the Society of Physical Medicine. The Council now publishes a "Handbook of Physical Medicine" and the Congress publishes the *Archives of Physical Medicine*. There has been a tendency to speak of technical workers in this field as physiotherapists or physical therapists. For more than two years a representative group from the membership of the American Congress of Physical Medicine has been discussing a suitable designation for the physician who specializes in physical medicine. Three such designations have been proposed, and all sound strange when first used. The three terms which have been suggested are (1) "physiatrist," (2) "physiatrician" and (3) "physicologist." Among all groups of physicians who have discussed these terms a distinct preference has been expressed for the designation "physiatrist." While this term may sound peculiar to the uninitiated ear, the terms "psychiatrist," "physicist," "internist" and "orthopedist" probably sounded equally queer when they were first proposed. The term "physiatrics" already appears in standard dictionaries as an acceptable word. The designation "physiatrist" is etymologically correct and stems from pure Greek origins. It derives from the two Greek words "physis" and "iatreia." "Physis" pertains to physical phenomena or natural phenomena and the terms "physicist" and "physiologist" derive their first syllables from the same origin. "Iatreia" refers to healing or healer or physician, so that a physiatrist would be a physician who employs physical agents. At its last annual meeting the Council on Physical Medicine voted to sponsor the term "physiatrist" as the designation for the physician specializing in physical medicine. Now that fellowships or residencies in physical medicine are being offered at such institutions as the University of Pennsylvania, University of Minnesota, Harvard University, New York University, Ohio State University and University of Kansas and at many other medical centers, a one word term should designate physicians who complete such fellowships.

OFFICIAL STATEMENT ON PENICILLIN IN SYPHILIS

The following statement, for release to the press, was prepared jointly on April 22 by Dr. J. R. Heller Jr., director of the U. S. Public Health Service, and Dr. J. E. Moore, chairman, Syphilis Study Section, National Institute of Health, and was approved by Dr. A. N. Richards, Committee on Medical Research, Dr. R. E. Dyer and Dr. Thomas Parran, U. S. Public Health Service, and Dr. R. P. Herwick, Food and Drug Administration. The statement was released to all leading press services:

> The Syphilis Study Section of the National Institute of Health, U. S. Public Health Service, became aware some months ago of the fact that penicillin as commercially prepared contained not one but several penicillins, known as G, X, F and K. Penicillin K has been shown to be of little or no value in syphilis and in certain other infections because, as compared with other penicillins, it is rapidly destroyed in the body. The relative effectiveness of the other penicillins, G, X and F, has not yet been determined for syphilis or for other infections.
>
> As commercially supplied during recent months the penicillin of some manufacturers, but not of all, has contained substantial though not preponderant amounts of penicillin K. The proportions of K have not been enough to reduce seriously the value of the drug in the treatment of syphilis or in any other infections; and there is no occasion for alarm on the part of physicians who have used it or of patients who have been treated with it. As currently available and employed, penicillin is the best and safest method of treatment of syphilis yet devised. Any patient frightened by newspaper publicity has only to consult his physician or clinic for his usual recheck examination in order to determine his present status.
>
> The situation as to penicillin is a complicated scientific problem under cooperative study both in laboratories and in clinics working under the sponsorship of the National Institute of Health and by industry. Industry has already taken immediate steps to reduce the K content of commercial penicillin and will rapidly apply further scientific information as it becomes available. The public will likewise be informed of important developments as they occur.

The statement was necessitated by the fact that a writer named Albert Deutsch in a paper called *PM* published a grossly inaccurate and irresponsible statement on the subject before the official scientific report directed to the medical profession could be prepared and released. The source of Deutsch's information is unknown, but presumably some one who participated in the official conference violated his agreement to abide by the official release of the facts.

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MEDICINE AND THE WAR

ARMY

PROFESSIONAL CONSULTANTS

In order to insure the maintenance of the highest professional standards and to provide close liaison with leaders in the medical profession at large, a system of utilizing professional consultants developed by the Surgeon General during World War II will be continued and extended in the future. Professional consultants who are recognized experts in the medical and allied specialties, including internal medicine, surgery, neuropsychiatry, preventive medicine, dentistry, veterinary medicine and other special medical fields, will be designated by the Surgeon General, according to War Department Circular 101, dated April 4, 1946.

Recommendations for appointments in connection with special subjects such as dentistry and veterinary medicine will be made by the senior officer in these fields. They may be either appropriate officers commissioned in the military service (Regular Army, Army of the United States, Officers Reserve Corps or National Guard of the United States) or qualified civilians selected to render consultant service. Although the provisions of this circular apply particularly to the United States, overseas commanders will utilize appropriate medical officers in their commands for similar duties or may procure professional advice from locally available civilian medical experts.

Qualified persons, designated by the Surgeon General will be utilized as medical consultants in one of two capacities—that is, either by being ordered to active duty as officers commissioned in the Officers' Reserve Corps or the National Guard of the United States in accordance with War Department policy or by being employed as consultant holding accepted civilian appointments under the authority of the Secretary of War. The consent of the individual concerned will be obtained prior to placing him on duty. The Surgeon General will maintain up to date lists and from time to time inform all concerned of the names, address and qualifications of medical experts selected and approved for consultant duty. He will also furnish details regarding the procedures for placing consultants on duty. These instructions are equally applicable to dental and to veterinary consultants.

AWARDED MERITORIOUS SERVICE UNIT PLAQUE

The Meritorious Service Plaque was recently awarded to the Army Institute of Pathology. The letter of transmittal from the Surgeon General to the director of the institute, Col. J. E. Ash, read, in part, "Under the provisions of circular 345, War Department, 1944, as amended by section 1, circular 331, 1945, I take great pleasure in awarding the Meritorious Service Plaque to the Army Institute of Pathology, your command, for superior performance of an exceptionally difficult mission and for untiring devotion to duty of the personnel of this unit during the period July 1945 to Dec. 31, 1945."

ARMY AWARDS AND COMMENDATIONS

Colonel Paul F. Russell

The Legion of Merit was recently presented to Col Paul F. Russell, Washington, D. C., for exceptionally meritorious conduct in the performance of services in Italy from March 14 to Sept. 24, 1944. During this time, according to the citation, "Colonel Russell, as chief malariologist, Allied Commission, by his efficiency in the performance of his duties and unceasing application to the problems under his jurisdiction, succeeded in eliminating the factors which threatened the addition of an acute malaria epidemic to those other problems with which the Allied Forces in Italy were faced. Working under all the disabilities imposed by the chaotic conditions of modern warfare, he organized civilian malaria control bodies and coordinated their work in such a fashion that the menace of malaria, which might well have nullified much of the Allied military efforts in the Italian campaigns, was successfully coped with in all occupied territory and in the combat areas. Apart from the value to actual military operations, Colonel Russell's work ranks among the highest accomplishments of the Allied Forces in Italy."

Colonel Russell also received the Oak Leaf Cluster to the Legion of Merit, which was accompanied by a citation stating that while he was serving as chief of the Tropical Disease Control Section, Preventive Medicine Service, Office of the Surgeon General, from May 23, 1942 to Sept. 9, 1943, he "rendered services of inestimable value in the Army's program for the control of insect borne diseases. Skilfully utilizing his wide experience in malariology, Colonel Russell developed a program for the control of malaria in overseas theaters where this disease has become one of the Army's foremost medical problems of World War II. He initiated the establishment of malaria survey and control detachments within the Medical Department, planned tables of organization and equipment and formulated policies for their employment in the field. The effective functioning of these control units was a decisive factor in reducing malaria rates to a point where they were no longer a significant influence on military operations. Colonel Russell's meritorious achievements were a highly effective contribution to the war effort, and his services were rendered with an unselfish devotion to our armed forces."

Dr. Russell graduated from Cornell University School of Medicine in 1921 and entered the service May 20, 1942.

Major John M. Usow

The Bronze Star Medal was recently awarded to Major John M. Usow, Milwaukee, "for meritorious achievement in connection with military operations in the Mediterranean Theater from Dec. 1, 1942 to May 8, 1945. As one of the pioneer neuropsychiatrists in the Mediterranean Theater of Operations, Major Usow personally treated a majority of the psychiatric casualties evacuated from the Tunisian front, most of whom were returned to useful duty in the theater, and in addition was responsible for the establishment of the first medical board for the disposition of such patients. By his great energy and superior professional ability, Major Usow was responsible personally for the return to duty in the theater of hundreds of psychiatric casualties and contributed in a large measure to the formulation of standards, policies and methods resulting in the return to duty of thousands of other such patients. By his actions and by his devotion to duty he played a leading role in conserving the strength of the command and has reflected credit on himself and the Medical Corps of the Army of the United States." Dr. Usow graduated from Marquette University School of Medicine, Milwaukee, in 1934 and entered the service Aug. 30, 1942.

Major Max C. Igloe

The Bronze Star was recently presented to Major Max C. Igloe, DeRidder, La., "for meritorious service in connection with military operations against an enemy of the United States during the period Aug. 1, 1944 to May 8, 1945. Major Igloe, serving as chief of the Public Health Subsection, G-5 Section, Headquarters Third U. S. Army, distinguished himself by his outstanding performance of duty. The professional skill and resourcefulness he displayed, his loyal, untiring devotion to duty reflect great credit on himself and the military service." Dr. Igloe graduated from the University of Illinois College of Medicine, Chicago, in 1927 and entered the service Aug. 28, 1942.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

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Bishop, Brooks H., Capt., 7800 1st Ave. S., Birmingham.
Caldwell, Samuel W., Major, 4315 10th Ave., Wylam.
French, James H., 1st Lt., N. Main St., Brundidge.
Gray, Frederick J. Jr., 1st Lt., 82 Village, Sheffield.
Hamrick, R. A., Major, 1325 W. 45th St., Belview, Birmingham.
Moore, Joseph W., Major, Clanton.
Partridge, Clarence V., Major, 17 S. Monterey St., Mobile.
Perley, Abraham I., Major, State Board of Health, Lafayette.
Peterson, Carl M., Capt., Box 442, Opelika.
Simpson, Sam P., Capt., 4 Dwight Sq., Alabama City.

Connecticut

Bakunin, Maurice L., Capt., 105 Brooklawn Ave., Bridgeport.
Birnbaum, Hyman B., 1st Lt., Madison.
Erskine, Louis A., Capt., 789 Howard Ave., New Haven.
Horn, Benjamin, Major, 620 Clinton Ave., Bridgeport.
Pious, Lawrence K., 1st Lt., 756 George St., New Haven.
Reidy, Maurice J. Jr., Capt., 43 Walnut St., Winsted.
Sayers, John J., Capt., 33 Mountford St., Hartford.
Serena, J. M., 1st Lt., Cor. Garner St. & Oakfield Dr., Norwalk.

District of Columbia

Barrett, Robert J. Jr., Capt., 14 Grant Circle N.W., Washington.
Gannon, J. A. Jr., Capt., 1915 Biltmore St. N.W., Washington.
Gordon, Everett J., Capt., 321 N St. N.W., Washington.
Heilman, Charles, Capt., 5501 1st St. N.W., Washington.
Henkin, Allen E., Capt., 3553 Georgia Ave. N.W., Washington.
MacAtee, G. J., Capt., 2205 California St. N.W., Washington.
Scott, James M., Capt., 3834 McKinley St. N.W., Washington.

Florida

Barks, Orville L., 1st Lt., Groveland.
Briggs, John N., Capt., Naples.
Capland, Lewis, Capt., 4475 Nautilus Dr., Miami Beach.
Gowin, Thomas S., Capt., Riddle Field, Clewiston.
McCall, Eugene F., Capt., 2865 College St., Jacksonville.
McIntire, Frederic J. Jr., Capt., 266 W. 35th St., Miami Beach.
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Beck, Merrill C., 1st Lt., 1020 Short St., New Orleans.
Bingham, Clifton, Major, Istrouma Hotel, Baton Rouge.
Blanchard, Neal D., Major, 553 Prospect St., Shreveport.
Breffeilh, L. A., Capt., Iberia Parish Health Unit, New Iberia.
Brewer, Frederic W., Major, Box 687, Sulphur.
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Murdock, Lloyd H., Capt., Zwolle.

Maine

Curtis, John B., Capt., Milo.
Fisher, Samson, Capt., 293 Pleasant St., Oakland.
McLaughlin, Ivan E., Capt., 53 Dresden Ave., Gardiner.
Nickerson, Norman H., Lt. Col., Greenville.
Rich, David, Capt., 165 Essex St., Bangor.
Rosen, Abraham E., Lt. Col., 438 Hammond St., Bangor.
Simecek, Victor H., Capt., 179 Main St., Brunswick.
Spencer, Jack, Col., 339 Danforth St., Portland.

Oklahoma

Bilger, Earl E., Capt., Claremore.
Haddock, John P., 1st Lt., 231 E. Gray, Norman.
Miles, Walter H., Lt. Col., 1221 N.E. 14th St., Oklahoma City.
Morey, John B., Major, 1314 S. Johnson, Ada.
Newell, Waldo B. Jr., Capt., 2600 E. Willow, Enid.
Pigford, Charles A., Col., 1202 E. 14th Pl., Tulsa.
Smith, Charles A., Major, 406 N.W. 22d, Oklahoma.

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Gessler, Ivan W., Capt., McMinnville.
Hall, James T., Lt. Col., 648 Chelsen Ave., Memphis.
Hall, Vonnie A., Capt., 951 Sheridan St., Memphis.
Harris, Leo C. Jr., Capt., 860 Madison Ave., Memphis.
Hurt, William E., Capt., Halis.
Kuykendall, Nathaniel W. Jr., Capt., 1265 Union Ave., Memphis.
Manson, Tim J., Capt., 417 Sunset Rd., Lookout Mountain.
Maxwell, John W., Capt., 1508 Hawkins St., Nashville.
Morris, Al K., Major, Fork Mountain.
Myron, Harry Jr., 1st Lt., Johnson City.
Pentecost, Ben L., Lt. Col., 974 N. Parkway, Memphis.
Saffold, John H., Capt., 1206 N. Broadway, Knoxville.
Shaw, John L., Major, 38 N. Belvedere St., Memphis.

Utah

Bourne, John R., Capt., Roosevelt.
Clark, James K., Capt., 376 N. 4th E, Provo.
Coletti, Anthony E., Major, Box 145, RFD 1, Clearfield.
Nelson, Walfred A., Major, 1309 Michigan Ave., Salt Lake City.

Vermont

Harris, Max, Capt., 90 Lincoln Ave., St. Albans.
Mills, Ernest L., Capt., 339 Colchester Ave., Burlington.
Monti, Lyle J., Capt., 15 Humbert St., Barre.

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Barton, Harry Jacobs Jr., Capt., 1301-21 Franklin Rd., Roanoke.
Buxton, Ernest P. Jr., Major, 707 Med. Arts Bldg., Richmond.
Byrd, Charles W., 1st Lt., Louisa.
Craddock, George B., Capt., 913 Allied Arts Bldg., Lynchburg.
Foust, Glenn T. Jr., Capt., 310 Park Pl., Charlottesville.
Gosliner, B. J., Capt., RFD 1, Chesapeake Beach, Lynnhaven.
Harman, William E., Capt., Floyd.

Washington

Beaver, Nathaniel E., Capt., 1125 S. Division, Walla Walla.
Broz, William R., Capt., 915 37th Ave., Seattle.
Congdon, Russell S., Capt., Red Apple Rd., Route 1, Wenatchee.
Epton, Josh W., Lt. Col., 1 Walnut Rd., Opportunity.
Fitzmaurice, Bertrand T., Capt., 4201 55th Ave. N.E., Seattle.
Harmon, Merle S., Lt. Col., 214 W. Beacon, Montesano.
Harrington, Bernard D., Lt. Col., 315 S. K St., Tacoma.
Jones, Scott S., Lt. Col., 2208 N. Cedar St., Tacoma.
Knudson, Wendell C., Capt., 1627 Calhoun St., Seattle.
McFee, John L., Capt., 3704 S. Yakima Ave., Tacoma.
Noonan, Clayton T., Major, 5810 Cowan Pl., Seattle.
Parrott, Robert M., Capt., Rt. 7, Box 947, Tacoma.

West Virginia

Baldock, Harry E., Capt., 1217 Edgewood Dr., Charleston.
Crews, Howard R., Capt., 1001 12th St., Huntington.
Gaynor, John S., Capt., Peters Run Rd., Elm Grove.
Given, Arnold J., Capt., Rensford.
McCuskey, Paul L., Capt., 903½ McColloch St., Wheeling.
Nutter, Raymond B. Jr., Capt., Lumberport.
Peters, Joseph T., Capt., 436 Forest Ave., South Charleston.
Polen, Frederic E., Capt., 3421 Main St., Holliday's Cove.

Wisconsin

Bentley, John E., Lt. Col., Wisconsin Gen. Hosp., Madison.
Birk, Benjamin J., Col., Route 2, Thiensville.
Boner, Albert J., Major, 15 W. Main St., Madison.
Boren, John W. Jr., Capt., 363 State St., Marinette.
Carl, Evan F., 1st Lt., 606 W. Wisconsin Ave., Milwaukee.
Covell, Kermit W., Major, 1024 Main St., Racine.
Fosmark, Carl A., Capt., 602 S. Thornton, Madison.
Hardgrove, M. A. F., Col., 2634 N. Maryland Ave., Milwaukee.
McBain, Louis B., Major, 123 N. Green Bay St., Appleton.
Montgomery, Samuel A., Major, 527 W. 33d St., La Crosse.
Muenzner, R. J. Jr., Major, 3308 W. Wisconsin, Milwaukee.
Nathan, David A., Major, % Mrs. Nate Silver, Racine Hotel, Racine.
Nuzum, Thomas O., Major, 454 Wells St., Janesville.
Rabin, Allen, 1st Lt., 1442 N. 12th St., Milwaukee.
Rothman, Leonard E., Lt. Col., 2677 N. Grant Blvd., Milwaukee.
Saunders, Otis W., Major, 898 Hubbard St., Green Bay.
Saxe, Jack J., Capt., 617 W. Wisconsin St., Portage.
Shannon, Richard C., Capt., 2749 N. 45th St., Milwaukee.
Stern, Louis S., Lt. Col., 3331 W. National Ave., Milwaukee.

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ORGANIZATION SECTION

National Health Program

PLATFORM ADOPTED BY THE AMERICAN MEDICAL ASSOCIATION

One of the ten points in this platform will be published each week.

4. The child should have throughout infancy proper attention, including scientific nutrition, immunization against preventable disease and other services included in infant welfare. Such services are best supplied by personal contact between the mother and the individual physician but may be provided through child care and infant welfare stations administered under local auspices with support by tax funds whenever the need can be shown.

Medical Economics

GEORGIA MEDICAL SOCIETY ACTS ON WAGNER-MURRAY-DINGELL BILL

(NOTE.—Following is the official action of the Georgia Medical Society taken March 16 on the Wagner-Murray-Dingell Bill:)

It is the consensus of opinion of the members of the Georgia Medical Society that socialization or any other form of regimentation of medical services, administered from the national level, is expensive, wasteful and time consuming, ill suited to the care of the sick in general and the medical emergency in particular. Such a program could not be administered in a democratic manner pleasing to either the patient or the physician.

The quality of service to the patient would be strained and inferior in the beginning and would deteriorate rapidly. Medical research would be curtailed, medical education would be static and medical progress in general would be set back two years for every single year such a program was in effect. That has been the experience in those countries where regimentation of medical services has been tried.

The plan of Senators Wagner and Murray and Congressman Dingell is socialization of the most vicious sort and must be defeated. Their original bills were referred to the Senate Finance Committee and the House Ways and Means Committee. They have not been reported out, but after President Truman's message to Congress on Nov. 19, 1945 Senators Wagner and Murray introduced a new bill, S. 1606, in the Senate and Congressman John Dingell introduced an identical bill, H. R. 4730, in the House of Representatives. These bills were shorn of some of the financial provisions, making it possible to refer them to committees more sympathetic. For example, S. 1606 was referred to the Committee on Education and Labor, of which committee Senator Murray is chairman. These bills will undoubtedly be reported out of committee and probably at an early date. When reported out, they will have the very strong support of the C. I. O. and other well organized groups, which may make their defeat most difficult. We are informed that the Y. W. C. A. in national session at Atlantic City two weeks ago went on record as favoring such legislation.

The Georgia Medical Society is gravely concerned about such trends and unalterably opposed to such legislation. Several months ago a committee was appointed to meet with similar committees from the dentists, lawyers, pharmacists, retail credit men, realtors, medical auxiliary, pharmacists auxiliary, nurses and others to seek ways and means of opposing socialistic trends in national government and to seek ways and means of curing those ills which foster such trends.

We have met with enthusiastic cooperation from the other groups and have learned much and accomplished much in our first few meetings. We have organized and solidified our home front and have sent to our Senators and Congressmen more than twelve hundred letters from the citizens of Savannah letting them hear at long last the voice of our stratum of society, a voice too long silent in this country. We feel confident that organization of these groups can be accomplished in every county, parish and state of this great nation and the letters of protest pouring by the millions into Washington can save for us that freedom of thought and action for which our ancestors bled and died.

JOHN L. ELLIOTT, M.D., Chairman.
HOWARD T. EXLEY, M.D.
W. V. LONG, M.D., President.

Washington Letter

(From a Special Correspondent)

April 29, 1946.

Successful Treatment of Gonorrhea with Penicillin

The War Department has announced that 96 per cent of some 11,000 cases of gonorrhea among servicemen treated with penicillin at Fort Meade during the past have been cured without hospitalization. The remaining 4 per cent were generally cleared up through combining sulfathiazole with penicillin. The War Department stated that the high incidence of venereal disease at Fort Meade was the result of its use as a separation center for overseas veterans, and it is the policy of the Army not to discharge any man so afflicted. Of 25,968 patients treated for venereal disease, approximately 11,000 received an average of four treatments each, exactly 42,807 in all.

More Health Education for Public Schools

Dr. Hobart M. Corning, newly appointed superintendent of District of Columbia public schools, advocates improvement in health education in public schools. He told a meeting of teachers that the schools of the country have a tremendous responsibility to build the health of students.

Senate Bill Prohibits Unauthorized Sale of Barbiturates

The Senate has passed and sent to the House a bill to ban, under heavy penalties, the unauthorized sale of barbiturates in the District of Columbia. The bill was sponsored by the Federation of Women's Clubs.

Two Way Radio Telephone Service For Doctors and Nurses

A radio engineering concern in Alexandria, Va., established by four war veterans, has started a new two way radio telephone service for automobiles operated by doctors and nurses, ambulances and taxicabs.

Official Notes

"DOCTORS AT HOME" TIME NOT CHANGED

Contrary to the announcement last week the radio time of "Doctors at Home" remains unchanged with the adoption of Daylight Saving Time. This Saturday afternoon program over the NBC network will continue to be heard at 4 to 4:30 p. m. Eastern Time, 3 to 3:30 Central Time, 2 to 2:30 Mountain Time and 1 to 1:30 Pacific Time. Wherever Daylight Time is not in operation, the program will be one hour earlier.

Following are the programs scheduled for the remainder of the series:

May 4. Child behavior.
May 11. Mushroom poisoning.
May 18. Highway safety.
May 25. Trichinosis.
June 1. Health education.
June 8. Medicine in the future.

These programs will be summarized alternately by Drs. W. W. Bauer and William W. Bolton, respectively Director and Assistant Director of the Bureau of Health Education.

THE WAGNER-MURRAY-DINGELL BILL

Hearings on S. 1606—To Provide for a National Health Program

(NOTE.—*This is a condensation of the verbatim report of the hearings.*—ED.)

(Continued from page 1250, volume 130)

United States Senate, Committee on Education and Labor.

APRIL 10, 1946

The HONORABLE JAMES E. MURRAY Presiding

PRESENT: Senators Murray, Johnston, Aiken and Donnell.

Statement of Harold L. Ickes, Executive Chairman of the Independent Citizens Committee of the Arts, Sciences and Professions

MR. ICKES: I am glad to have this opportunity to appear before this distinguished committee today in support of the purposes of the Wagner-Murray-Dingell Bill.

(Mr. Ickes told of his interest in conserving our resources and of the inadequacies in health revealed by the Selective Service.)

I am not disposed to believe implicitly in the rigid accuracy of these figures or to infer too much from them. I am well aware that the standards of local draft boards varied from county to county and from time to time, and that some men who were rejected for physical defects might well have been accepted at a later time or in a different county. I also know that there are hundreds, perhaps even thousands, of men who, by one device or another, simulated an illness of sufficient gravity to warrant rejection by their draft board.

I am however conscious that thousands, and perhaps tens of thousands, of men with fairly grave physical defects were drafted into the Army when this country reached the end of its manpower resources back in 1944. So it is my belief that while these figures from the Selective Service System may not be strictly accurate they are probably roughly so, and to my mind they are indicative of a serious flaw in the system under which, in normal times, the medical needs of the people of this country are provided for.

There are other evidences to support the contention that medical care in this country is not what it should be. On the basis of the latest available figures there are seven other countries in the world which have lower infant mortality rates than this one. There are eight or nine which have lower mortality rates for adolescents.

The reason for the higher incidence of death among almost all classes in this country than in many others is found, in part at least, in the tragic figures which show that, even before the war, our rural areas were but scantily supplied with doctors and nurses.

(Mr. Ickes discussed mortality and morbidity rates.)

I would be the last to deny that the country doctor has produced miracles in his time, but I think that the country doctor who has performed these miracles for years without adequate tools of his profession to help him deserves a better fate than to be consigned forever to caring for his patients through the medium of a bag of pills and a stethoscope.

I am no Johnny-come-lately to the cause of more adequate hospital facilities for the people of this country. When President Roosevelt designated me as public works administrator, I early had impressed on me the woful lack of modern medical facilities in the United States, and during my tenure of that office nearly eight hundred projects providing for new hospitals or additions and improvements to existing ones were initiated.

All told, close to half a billion dollars was spent under my direction for the improvement of the means of taking care of the nation's ill and diseased. And this does not include the huge sums, nearly a billion dollars, which were spent in what might be called the field of preventive medicine, for sewer and water systems, for example. My only regret is that more of the funds which were spent in those days were not put to use in permanent improvements such as the PWA built rather than in being frittered away on programs of doubtful value.

(Mr. Ickes discussed at great length the mine worker's plan for a health and welfare fund.)

I might add at this point that I am unable to see the wisdom of setting up veterans' hospitals throughout the country solely for veterans. I think that the medical problems of veterans whether they be maimed or psychotic are no different from the medical problems of the industrial worker who loses an arm or a leg or his mind. I cannot see why the treatment should be different. I challenge any one to tell me why a munitions worker who lost his legs in an explosion while loading shells during the war should be treated any differently than the soldier who suffered the same injury on the battlefield. I am not proposing here that our veterans receive anything less than the best. I am not suggesting that they be pushed out of hospitals to make room for civilians. What I am advocating is that all of us everywhere in this nation have the benefit of competent medical and hospital facilities. Hospitals treat people, not veterans or coal miners. They treat diseases—tuberculosis, silicosis, cancer—not dock workers or musicians.

In summary, let me say that I believe that there is a real and vital need for more adequate medical care for more of this nation's inhabitants. I believe something should be done about this and quickly. I do not believe that this job can be done piecemeal or by industry or labor alone. I think that the Wagner-Murray-Dingell Bill provides what seems to me to be a real opportunity to achieve the end that all of us desire.

SENATOR MURRAY: Mr. Ickes, I note that you have talked mainly of the lack of adequate modern medical care and hospitalization in this country and the need of some plan whereby more modern medical care and hospitalization shall be made available to the people of this country. Have you studied the various technical provisions of the bill, and are you prepared to discuss those provisions in regard to the effect that they will have and the manner in which they purport to bring to the American people this modern medical care and hospitalization that we have? MR. ICKES: I would not be competent to discuss those, Senator, but Dr. Butler of Harvard Medical School is here, and I understand that he will follow me as a witness, and he has forgotten more than I ever knew about such matters.

SENATOR JOHNSTON: I notice that you speak critically of the government taking over the medical problems of the veterans. You say that they have no more right to go into that field than they do for the medical problems of the industrial workers. Do you not think service connected disability is quite different from probably some one working for a private industry? MR. ICKES: The veterans, of course, ought to have all the medical help and attention that they need, but civilians also ought to have it.

SENATOR JOHNSTON: You make the statement "I think that the medical problems of veterans, whether they be maimed or psychotic, are no different from the medical problems of the industrial worker who loses an arm or a leg or is maimed." You say, in a sense, that a man that is wounded on the battlefield is no different from a man that is injured in industry. MR. ICKES: I said no such thing, and I am not going to be drawn into a demagogic discussion.

SENATOR JOHNSTON: That is what you say. If anybody gets demagogic, I think from past records and history it might be the past and the ex-secretary of the interior.

MR. ICKES: What about a man digging coal in order to carry on the war? If you want to go down that alley, it has many ramifications. SENATOR JOHNSTON: Your ideas are absolutely socialistic, to take over everything, is that true? MR. ICKES: Far from it.

SENATOR JOHNSTON: Where are you going to stop? MR. ICKES: Well, I do not have to say where I am going to stop. I am saying where we ought to go.

SENATOR JOHNSTON: I will be the one to pass on the legislation and pass it, and I want you to tell me where to stop. Where would you stop? MR. ICKES: The statement takes care of that.

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SENATOR JOHNSTON: You leave it entirely up to us, but you do not say anything the way your statement is, it is only general. MR. ICKES: It is general.

SENATOR JOHNSTON: But you are willing to go all the way, are you not? What are you going to do with the doctors throughout the United States? MR. ICKES: I think people are entitled to more medical and hospitalization services than they are getting.

SENATOR JOHNSTON: Are you going to take over all the doctors in the United States? MR. ICKES: I would not propose that at all.

SENATOR AIKEN: I take it that you object to the 10 cent assessment on coal because that 10 cents would be added to the price of coal, and it would constitute a tax on all the people of the United States who use coal for the benefit of a single occupational group of around 500,000 men? MR. ICKES: It is the wrong approach, and it is giving the power of taxation to a nongovernmental group.

SENATOR AIKEN: And if that was carried far enough you would find all union labor would be given the benefits of hospitalization and medical care, whereas the majority of the people, workmen who do not belong to unions, would be left on the outside? MR. ICKES: That is right.

SENATOR DONNELL: Mr. Ickes, I observe, as you emphasized, that you have carefully refrained from commenting on the specific provisions of this bill, S. 1606. MR. ICKES: Yes.

SENATOR DONNELL: I will ask you to state whether you have read this bill, 1606? MR. ICKES: Well, I was prepared for that question, because I understand that is a customary question from the Senator. I have not. I have read a carefully prepared digest of it, and I did not know, I have been appearing before Congressional committees for some thirteen years, and I did not know that it was a necessary prerequisite to have read carefully a bill, because I have appeared before so many committees the members of which had not read the bill.

SENATOR MURRAY: I believe at the commencement of these hearings it was stated that several Senators had not read the bill.

SENATOR DONNELL: Referring now to my question, you have not read the bill, is that correct? MR. ICKES: That is correct.

SENATOR DONNELL: Have you read any part of it? MR. ICKES: Yes, sir.

SENATOR DONNELL: Which part of S. 1606 have you read? MR. ICKES: Oh well, I read the parts that I wanted to read.

SENATOR DONNELL: Which was that part? MR. ICKES: I am not prepared to say.

SENATOR DONNELL: How recently have you read this bill, or the part of it? MR. ICKES: During the last two or three days.

SENATOR DONNELL: And you are still not prepared to say what parts of it you have read; is that right? MR. ICKES: I think it would be by way of supererogation, and I do not think that the question is pertinent, if I may say so, and I do not think that any good would result from my entering into a detailed statement of what I have read, or even if I should read any of the record, to cumber up those parts which I have read.

SENATOR DONNELL: The point that I am making is that you have not read all of the bill. MR. ICKES: I said that.

SENATOR DONNELL: And you are at this time unable to state to us what part you have read? MR. ICKES: I have said that two or three times.

SENATOR DONNELL: I would like to ask you to answer it again. You have not read all of this bill and you are unable to state what parts of the bill you have read, is that right? MR. ICKES: For the third time, no, and for the fourth time, in anticipation, no.

SENATOR DONNELL: Well, make it the fiftieth time and say no again. MR. ICKES: That is right.

SENATOR DONNELL: Now Mr. Ickes, you are described here at the outset as being the executive chairman of the Independent Citizens Committee of the Arts, Sciences and Professions. MR. ICKES: That is correct.

SENATOR DONNELL: Would you tell us, please, what is that committee and what is its composition and membership?

(*Mr. Ickes listed the officers of the committee.*)

SENATOR DONNELL: How large a membership does the committee have? MR. ICKES: Ten or twelve thousand.

SENATOR DONNELL: Are you appearing here on behalf of the committee or as an individual this morning? MR. ICKES: On behalf of the committee.

SENATOR DONNELL: Has the committee been polled in any way, Mr. Ickes, with respect to this bill, S. 1606? MR. ICKES: I can even answer that question.

SENATOR DONNELL: Will you tell us, please, about the poll? MR. ICKES: The national membership meeting on February 10, at the Alvin Theater in New York.

SENATOR DONNELL: That is, S. 1606 was endorsed? MR. ICKES: That is correct.

SENATOR DONNELL: Do you have a copy there of the resolution or endorsement? MR. ICKES: No. It has also been endorsed by the national board of directors and the board of directors of each chapter.

SENATOR DONNELL: How large a meeting was there in New York when this endorsement was made? MR. ICKES: I was not there; I do not know.

SENATOR DONNELL: Now, Mr. Ickes, you state also in your statement that no one would take exception to the method of paying for old age pensions which the federal government has provided. Now, as regards old age pensions, is it not a fact that the method which the United States government has provided is one under which the states through contributions, made both by the national government and by the state governments, administer the distribution of those old age pensions, that is correct, is it not? MR. ICKES: I do not know. What I had in mind was that this plan would be a contribution, a deduction from the pay of the employee, a contribution by the employer, and that administration would be under a board, an advisory council, the head of which would be the Surgeon General of the United States.

(*Senator Donnell by his questions revealed a lack of knowledge by Mr. Ickes of current activities in the field of medical care.*)

SENATOR DONNELL: Now you also mentioned, Mr. Ickes, in the course of your discussion the fact that hospital facilities are not adequately provided in some sections of the country, and you refer to that in general terms. MR. ICKES: That is right.

SENATOR DONNELL: Are you familiar with the bill recently passed by Congress having to do with this hospital problem? MR. ICKES: No.

SENATOR DONNELL: You do not know how adequately, if at all, that bill provides for the solution of that problem? MR. ICKES: No, but my guess would be that it would not be adequate.

SENATOR DONNELL: But have you examined that bill? MR. ICKES: No.

SENATOR DONNELL: Then you are proceeding merely on your impression as to what that bill probably is, is that right? MR. ICKES: No, I am not taking that bill into account at all.

SENATOR DONNELL: You are not taking it into account at all. You do know that such a bill was passed? MR. ICKES: I know the general situation, which I became familiar with as public works administrator, during which, among other things, we built some beautiful hospitals in St. Louis and other places in Missouri.

SENATOR DONNELL: You have not, however, studied the provisions of the hospital bill recently enacted by Congress just a few weeks ago? MR. ICKES: That is right.

SENATOR AIKEN: You did state, Mr. Ickes, somewhere in your testimony that construction of the hospital would not suffice unless there was some means of maintaining the operations of the hospital, which is not provided for in the hospital bill. MR. ICKES: I would expect that there would be a few flaws in it.

SENATOR MURRAY: Thank you for your statement, Mr. Ickes. MR. ICKES: You are quite welcome, and it is a great pleasure. I would like to make one observation, that I do not see why the personnel of an organization should be a matter of major interest, and I do not see what bearing it has on the merits of the pending legislation.

SENATOR JOHNSTON: I think that is where the committee disagrees with you, and I think that I do, and I think who you represent amounts to a great deal, and I think the public believes that. MR. ICKES: I am afraid that you have a suspicious mind.

SENATOR JOHNSTON: I probably do have a suspicious mind of you. MR. ICKES: Now that does flatter me.

SENATOR DONNELL: Of course, we are here undertaking to pass on a specific bill, that is what has been presented to this committee, Mr. Ickes. Now, may I ask you one or two further questions about this committee, on behalf of which you speak here this morning? You were not present at the New York

meeting, you say, which approved S. 1606? MR. ICKES: That is correct.

SENATOR DONNELL: Have you ever seen the copy of the resolution that was adopted at that meeting? MR. ICKES: No.

(Mr. Ickes was questioned as to the number of members of the Independent Committee that expressed their view.)

SENATOR DONNELL: Now, Mr. Ickes, do you know whether or not the fact that S. 1606 was to be discussed at that meeting was included in the notice of the meeting which was sent, and whether or not the membership of this committee, some eleven or twelve thousand, have ever received a copy of S. 1606 from which to study its terms? MR. ICKES: No, but I must, if I may, or I may if I must, to put it the other way, express my admiration for the clean bill of health and the impeccable state of mind with which anybody apparently must approach a bill these days. I do not suppose this was any immaculate conception, Senator. It was a group of members that discussed, maybe inherently as one votes a straight ticket in an election booth, approval or disapproval of a certain measure. It is a democratic process, democratically carried on and not subject to question, Senator, as to methods.

SENATOR DONNELL: Mr. Ickes, if I may be pardoned, I am not at all questioning the right of that committee to pass on the matter, and we welcome its views, but I do think that we have a perfect right to inquire into the degree of care which that committee and its officers, including yourself, have taken for the study with respect to the study both of the principles and of the bill. MR. ICKES: I was not an officer at the time.

SENATOR DONNELL: When were you made an officer of this committee? MR. ICKES: Five or six weeks ago.

SENATOR DONNELL: So you are not informed, I take it, of what transpired except in a very general way, like any citizen would be, in that committee or its deliberations, prior to the time you went in? MR. ICKES: All that I have given you is hearsay and therefore irrelevant and incompetent.

SENATOR DONNELL: I do not think so, I think we are glad to have it and it is helpful to have your views, and I want to respect your views, and I am glad to have them. Mr. Ickes, do you know, please, whether or not included in the membership of the Independent Citizens Committee of Arts, Sciences and Professions there is any sizable number of physicians, and if so, I would be glad to know approximately what proportion, and perhaps Dr. Butler will know. DR. BUTLER: They are sizable.

SENATOR DONNELL: The doctor is going to be on the stand and we can find out from him. You are not informed personally? MR. ICKES: No.

SENATOR DONNELL: Let me ask you one concluding question, and that is have you ever examined S. 1050, namely the bill which was approved, as I understand it from Dr. Butler, a year or so ago? MR. ICKES: I have not.

Statement of Dr. Allan M. Butler, Associate Professor of Pediatrics, Harvard Medical School, Chief of the Children's Medical Service, Massachusetts General Hospital, and an Editor of the Journal of Clinical Investigation, Journal of Pediatrics, Quarterly Review of Pediatrics and Advances in Pediatrics

DR. BUTLER: Dr. Allan M. Butler from Boston. I am here representing the Independent Citizens Committee, which has just been discussed. I am associate professor of pediatrics at the Harvard University Medical School, chief of the children's service, Massachusetts General Hospital, and an editor of five medical journals.

(Dr. Butler discussed at some length and with much florid diction the effects of scientific advancement on life.)

I trust that you, in considering this legislation, will accept the fact that the time honored general practitioner who rendered all aspects of medical care to patients is a casualty of the progress of science. We must face the fact that the total knowledge available for the care of patients today cannot be mastered by an individual physician. Modern medical care of the sick patient requires the services of not one but many physicians, as well as highly trained technical and nursing personnel skilled in the use of complicated apparatus and delicate technics. The hospital's role in medicine used to be the provision of bed and operating room facilities. Today, provision of these is no more important than the provision of the laboratory procedures and special technics on which proper medical diagnosis and treatment are more and more dependent.

. . . . . .

It is a foregone conclusion that some method of adequately financing medical care in an orderly and predictable manner must be evolved. Modern science has made medical care extremely costly to the individual patient. Personal experience has proved this too forcefully to probably each of us. Yet science has diminished the cost of illness to society by reducing the economic loss incident to death early in life and to unemployment due to illness. Obviously, distributing the cost of medical care over society as a whole is a logical solution of the problem created by the present inequitable distribution of the costs of illness.

Doctors should not and cannot continue to carry this economic burden. No other individuals in a system of free enterprise are asked to make such a contribution. The attempt of doctors to do so by soaking the rich is an unsatisfactory and illogical method of meeting the problem. As stated by the American Academy of Pediatrics, "the discrepancy that now exists between surgical fees on the one hand and free service to the indigent on the other has contributed in no small part to the problem of an equitable remuneration of physicians." The conclusion is inescapable that the high costs of modern medicine must be financed by people when they are well. They cannot be financed by those who suffer the misfortunes of illness.

Much is made of the difference between the voluntary or compulsory extension of insurance as a means of distributing medical costs. This actually is of minor importance. The important point is that the successful operation of either voluntary or legislative medical insurance on a scale that will be significant in solving the problem of cost will require reorganization of our current medical practice and development of effective administrative agencies at federal, state and local levels.

. . . . . .

It is imperative that any extension of insurance medicine include adequate provision for teaching and research. The bill before you does. If adequate provision is not made, then as insured patients cared for by physicians of their own choosing replace the charity hospital patients now cared for by the specially trained personnel of well organized teaching services the quality of medical education will be jeopardized. Because medical education determines what the medicine you get tomorrow will be, the preservation of teaching and clinical research units is of vital importance to the public. The point can hardly be overemphasized.

. . . . . .

The record of leadership of organized medicine is unbelievably reactionary. Indisputable evidence is presented in a paper in the *New England Journal of Medicine*, Feb. 21, 1946, which I would like to submit to this committee.

SENATOR DONNELL: Pardon me, if I may ask for the purposes of identification, would you be kind enough to give us the name of that particular paper? I think there were other papers in that particular issue. DR. BUTLER: Senator Murray has the only copy I had.

SENATOR DONNELL: "Minority Views on Improving Medical Care." It is by yourself. DR. BUTLER: By myself.

SENATOR DONNELL: Under the heading "Symposium on Medical Sociology." DR. BUTLER: Yes. These reactionaries, in arguing that attention should be paid to the solution of the general problems of housing, food, unemployment and poverty rather than to improving medical care, are again displaying a lack of responsible leadership in the field that is their business and in which wise direction of effort will bring results beneficial to public and doctors alike. Positive action should be taken on the legislation before you at this session of Congress. Restriction of this legislation to the provision of certain aspects of medical care to the needy with an inadequate budgetary appropriation may place government medical care in the category of our inadequately financed charity medicine. This could be disastrous to American medicine, because it might establish a cheap scale for both hospital and physician remuneration. If American medicine is to be good, it will be expensive. It will cost billions. Cheap medicine will mean poor medicine, and that, in the long run, will be expensive to the public.

SENATOR DONNELL: In the first place, he makes a statement on page 2 of the mimeographed copy that is rather startling, at least to a person not a member of the profession of medicine. At the end of the first full paragraph the sentence reads "This record"—and I assume he is referring to the Minnesota record —"reflects the fact that the only standard of practice enforced by state medical societies is the standard that avoids legal malpractice." I would like to ask the doctor, is it not a fact, Doctor, that codes of ethics have been adopted by many state societies and the American Medical Association which go far beyond the mere standard of avoidance of legal malpractice? Am I not correct on that? I may say, that is an assumption.

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DR. BUTLER: No, no, you are dead right. They have so-called codes of ethics.

SENATOR DONNELL: Yes. DR. BUTLER: Those codes of ethics, Senator, are not enforcible in terms of maintaining a quality of medical service, and I used the word "enforced" in the sentence you quoted.

SENATOR DONNELL: May I ask you also, Doctor, is it or is it not a fact that medical societies are attempting constantly to raise the ideals of the professional ethics among the members? DR. BUTLER: We must keep two things clear. If we are going to talk about professional ethics in terms of standards of medicine, we had better define what is included in professional ethics. As professional ethics are discussed in most medical societies and attempted to be maintained in most medical societies, they have very little to do with the quality of medical services.

SENATOR DONNELL: Doctor, I am not competent to argue that question with you, but it is a fact, is it not, that the medical societies taken by and large are attempting to see that there is a constant observance of the highest moral principles between physician and patient and the highest conceptions, not merely going back to what as I recall was the old Hippocratic Oath, but with modern day developments to insure a high professional standard of ethics between the physician and the patient. DR. BUTLER: They try to insure a pretty good standard of ethics between physician and patient, but again, Senator, that does not mean they are asserting every effective effort in seeing to it that the doctor renders to that patient a high quality of medical services.

SENATOR DONNELL: Are there instances in recent years of state medical societies expelling members of the profession for unprofessional conduct? DR. BUTLER: Only malpractice.

(Senator Donnell questioned Dr. Butler at length about the Citizen's Committee.)

SENATOR DONNELL: Doctor, you refer in your statement to the bureaucracy that dominates the opinion expressed by the so-called organized medicine. Do you mean by that bureaucracy an inner circle within organized medicine, or do you mean the association, as such? DR. BUTLER: I mean the inner circle.

SENATOR DONNELL: The inner circle. DR. BUTLER: In any organization which is as big as the thing like the American Medical Association and has the huge income of the American Medical Association there unfortunately develops a group whose livelihood depends on continuing to receive the full time relatively large salaries that are paid by the organization for maintaining the administrative end of their show.

SENATOR DONNELL: And that group is the group to which you refer as the "bureaucracy"? DR. BUTLER: That is right.

SENATOR MURRAY: Let me ask a question there. What is the official position of Dr. Fishbein? DR BUTLER: I do not know whether I should mention this, because I am not well informed, but I have inquired, and I have been told that Dr. Fishbein's official position in the American Medical Association is editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and I think one or two other journals that are published by that association. SENATOR MURRAY: He is not actively engaged in practicing medicine? DR. BUTLER: He is not actively engaged in practicing medicine, and, Senator, I would like to take this opportunity to state that unfortunately Dr. Fishbein, including a great many of the people who speak concerning medical matters for the American Medical Association, have rarely if ever practiced medicine, and certainly for years have not been engaged in the practice of medicine.

SENATOR DONNELL: Doctor, do you know approximately the membership of the American Medical Association, in number? DR. BUTLER: Yes.

SENATOR DONNELL: What is it? DR. BUTLER: The American Medical Association never lets you forget. It is about 130,000.

(Senator Donnell questioned Dr. Butler as to the composition of the House of Delegates of the A. M. A.)

SENATOR DONNELL: And they are the governing body and the body which presents the expression of the Association which is made during sessions of the House of Delegates. That is correct, is it not? DR. BUTLER: That is right.

SENATOR DONNELL: The House of Delegates of the American Medical Association has expressed itself, has it not, with respect to compulsory health insurance? DR. BUTLER: That was in the course of the past fifteen years since I have been interested in the improvement of medical care, the American Medical Association has expressed itself on anything that has been suggested to include medical care; and, in retrospect, they have been wrong every time they have expressed an opinion. Their record is extraordinary. You speak of the Blue Cross and what a wonderful thing it is. In 1934 the House of Delegates were against the Blue Cross. They have only begun to support it within the last four or five years.

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SENATOR DONNELL: Yes. I understand you disagree with that conclusion. You may be right, you may be wrong; but you are entitled to your opinion. Now, Doctor, on the first page you mention one sentence which I do not think has anything to do in particular with this bill except as an analogy. You say "Now, in peace, to prevent the total destruction of ourselves and of our civilization by the latest achievements of science, can we do other than submit to the sovereignty of a world government at the expense of our national independence?" DR. BUTLER: Surely.

SENATOR DONNELL: Do I understand that you favor the creation of a world government to which there shall be submitted the sovereignty of this nation at the expense of our national independence? DR. BUTLER: I do not favor that at this moment. I think, almost everybody must think, that we have not to look toward that pretty rapidly or, by golly, our science is just as likely to destroy us as health is.

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(Senator Donnell questioned Dr. Butler about the functions and activities of the American Medical Association. His answers showed a lack of accurate information.—Ed.)

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SENATOR JOHNSON: Doctor, do you think this bill ought to take care of the osteopaths and chiropractors? DR. BUTLER: I think the best way to handle that is almost to leave it alone. I, as a physician, have refused to pay any attention to the arguments pro and con of osteopaths and chiropractors. In a democracy we have to be tolerant. We have to permit people to do what they want to do as long as they do not transgress our laws. In doing so, we sometimes benefit, we sometimes suffer. I just would rather avoid any questions on osteopaths and chiropractors.

SENATOR JOHNSON: You think they do good, do you not? DR. BUTLER: I would rather not answer that question, because to answer it you would have to define when they did good, possibly, and when they did harm. It is awful hard for somebody to live in this world and not do some good some time.

SENATOR JOHNSON: The same is true in the medical profession; sometimes they do good and sometimes they do harm? DR. BUTLER: That is right. It is all a relative matter.

Statement of Reverend Francis W. McPeek, Chairman, Legislative Committee, Council for Social Action, Congregational-Christian Churches

MR. MCPEEK: Created by action of the General Council is an official organization known as the Council for Social Action of the Congregational-Christian Churches. Its eighteen members, whose names and occupations are appended, are elected by the General Council in its regular sessions. Their duty is to make a study of important moral or social questions, to determine Christian action in light of the social teachings of our church and to inform member churches of their judgments. They are also empowered to represent themselves on these questions in such places and at such times as seem appropriate to them. The Legislative Committee of the C. S. A., of which I have been chairman for several years, has been established for the special purposes of advising our fellow church members and other church groups of legislative issues significant to the welfare of the nation. I am afraid, Mr. Chairman, that I have been a bit tedious in explaining these matters, but I do so wish to make it clear that we have no mandate from the denomination as a whole. We could not have, short of an action by the General Council.

For several years we of the Legislative Committee—and of the Council for Social Action—have held firmly to a conviction that the existing plan of social security should be expanded and implemented. I shall not read the various sections of this policy statement but shall mention only the paragraph most relevant to the matter at hand:

"4. We hold that sickness and accidents cause social losses which can best be paid by a sound plan of public insurance. We believe that health and disability insurance can be provided on a democratic basis with full consideration for the rights of doctors and private hospitals."

Under such a declaration we have published our support to S. 1050 in principle—the Wagner-Murray-Dingell bill—and to

S. 1606, the National Health Insurance Plan, introduced by the same distinguished members of the Congress. In general, we believe that the compulsory health tax plan outlined therein is eminently fair to all citizens, as it is to all physicians. Under its several features we believe that America's health gains in the last ten years especially would be conserved and that our present distressing marks of ill health, so incontestably demonstrated by the Selective Service health inventory, would tend to be much more rapidly eliminated.

Having made these brief general remarks, Mr. Chairman, it is now my pleasure to introduce the distinguished physician who will speak on the particulars of the bill. A graduate of the Northwestern University School of Medicine, Dr. Theodore K. Lawless has studied not only at Talladega and the University of Kansas but also in European schools of medicine. His residence is in Chicago, where he has an extensive practice in his field of specialization, dermatology and also syphilology. I might further add that Dr. Lawless is a member of the American Medical Association and a member of the Council for Social Action of the Congregational-Christian Churches, for which latter organization he appears today.

Statement Made by Dr. Theodore K. Lawless, Accompanied by Reverend Francis W. McPeek

(*After a number of the routine arguments in behalf of compulsory sickness insurance Dr. Lawless complained of the difficulty of securing admission of a member of a minority race to St. Luke's Hospital in Chicago.*)

SENATOR DONNELL: Doctor, by "minority group" member, do you mean a member of the Negro race? DR. LAWLESS: Negroes, Mexicans, Japanese, Chinese.

SENATOR DONNELL: I meant this particular person. DR. LAWLESS: That is a Negro. The next one will be a Japanese. A doctor made all arrangements to operate on a patient in a well known hospital, yet when she presented herself admission was refused. She was a member of a minority group. Multiply these cases by 16 million and you have a vivid picture of the plight of these minorities in more than 90 per cent of American hospitals under today's plan for medical care.

Statement of Joseph P. Anderson, Executive Secretary, American Association of Social Workers

MR. ANDERSON: We have approximately 1,000 members in all sections of the country. They are employed in both private and public welfare agencies. We are organized in ninety-six chapters. Though our members become members of a national organization they can affiliate in groups in areas where there are a sufficient number for them to do so. Our purposes are twofold. First of all, we are concerned about improving the quality of social work in the same way Dr. Butler told you the American Medical Association tries to do. We make studies and collect data and publish reports. We issue a magazine which goes out to all our members and others who wish to subscribe to it. We have been concerned for a long time with medical care and public health service, and in 1941 we first issued a very brief statement in which we stated that it is the responsibility of government, together with the medical profession, to see that all the people who are in need of medical care and public health service receive that. We take such action at the annual delegates conference, to which the representatives of our various chapters come, and then by majority vote at that conference we adopt the statement of principles such and such.

SENATOR DONNELL: When was the most recent conference held? MR. ANDERSON: The most recent was in the middle of May of 1944. We did not have one in 1945 because there were no conferences being held. Our next is going to be held this coming May.

SENATOR DONNELL: Is there any specific resolution or principle they adopted at that time? MR. ANDERSON: Yes. At that time the original Wagner-Murray-Dingell bill had not come up for hearings but had been introduced, and the action we took was first to endorse in principle S. 1050 and also to urge that hearings be started.

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MR. ANDERSON: Now, in terms of the statement, I do not think I need read that and take the time. It merely states that we support the provisions, we believe in S. 1606, because we believe in supporting progressive development of public social and health services. We believe that health is a basic right of our people in the community. We think that at the present time people are not getting these services. And then I mention the four factors, which I am sure have been presented before to this committee, as to why the services are not now available, and then we mention the principles which we believe any legislation should be based on. And I believe that favorable action on this particular bill will represent a courageous and comprehensive attempt to break the old and vicious cycle of poverty begetting sickness and sickness begetting poverty.

Statement of Reverend Jack R. McMichael, Executive Secretary, Methodist Federation for Social Service

MR. MCMICHAEL: The Methodist Federation for Social Service has been in existence since 1907 and is the group out of which grew the original draft of the well known Social Creed of the Methodist Church, which became in substance the Social Creed of the Churches as adopted by the Federal Council of the Churches of Christ in America. The organization has the moral blessing and backing of the General Conference of the Methodist Church. It seeks to apply the ethical imperatives of the biblical gospel to the social relationships of men and women in our modern world. Our organization has long been dedicated to the realization of a program in America which would actually provide adequate medical care for all. From the beginning it has given earnest suport to the Wagner-Murray-Dingell bill as a great step in the direction of the ideal of universal and adequate medical care.

(*After reciting the same arguments used by other witnesses in behalf of the act in about the same words, he continued:*)

MR. MCMICHAEL: Commendable also are provisions calling for maximum participation by local, state and private agencies in the administration of the act and provisions for advisory councils, including representatives of the public as well as of the medical and other professions. We ministers welcome this opportunity for qualified clergymen who work intimately with individuals in a community to serve in their behalf on advisory councils. We urge that specific representation be given on these important councils to Negro, Jewish and other religious and racial minority groups so as to assure to them an equitable role and share in the administration and benefits of the act. We have been gratified by the interest recently shown by organized labor, not only in narrowly conceived trade union problems, but in public affairs and in health problems. We are confident that representatives of organized labor will also have a great contribution to make on these advisory councils.

SENATOR DONNELL: Reverend McMichael, when was held the most recent general conference of the Methodist Church? MR. MCMICHAEL: 1944.

SENATOR DONNELL: Did that conference express itself on the subject of compulsory health insurance? MR. MCMICHAEL: No.

SENATOR DONNELL: Has it ever expressed itself on that subject? MR. MCMICHAEL: Not that I know of, no. It has expressed itself officially on the subject of medical care for all.

SENATOR DONNELL: But not on the matter of compulsory health insurance, is that right? MR. MCMICHAEL: That is right, as far as I know.

APRIL 16, 1946

The Honorable James E. Murray (Chairman), Presiding

PRESENT: Senators Murray, Pepper, Ellender, Morse, Donnell and Aiken.

Statement of William Green, President, American Federation of Labor, Accompanied by Nelson H. Cruikshank, Director, Social Insurance Activities, American Federation of Labor

MR. GREEN: Our Committee on Social Security, of which Mr. Matthew Woll is chairman, has been now for several years engaged in a study of the inadequacies of our present social security program and has, with the assistance of experts in this field, drawn up a comprehensive plan for the development of a well rounded, national social security system.

The program we have developed includes, in addition to provisions for extending the facilities needed for health services and provisions for grants to states for public health services and maternal and child health and welfare services and for public assistance, proposals for the establishment of a national social insurance system. This covers temporary and extended disability, for the extension and improvement of our old age and survivors' insurance system, for the special protection needed by veterans, for a genuine and practical unemployment insurance program and for a national system of health insurance. This program also includes well considered methods for meeting its entire cost.

Our entire program for the development of a unified, comprehensive social security program worthy of a great nation in a position of world leadership, is contained in Senate bill 1050.

The proposal you have before you in the Senate bill 1606, therefore, represents but another part of an overall program.

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Thirty years ago we were definitely against the establishment of a health insurance program. But our great, democratic labor organizations, in response to the expressed needs and wishes of the membership, have steadily swung over to the support of this program, to the point where, in the last national convention of the American Federation of Labor, which was held in New Orleans in 1944, it was adopted unanimously.

Some of the enemies of this program have attempted to taunt us by quoting my predecessor, Samuel Gompers, in opposition to health posters, which they offer free and on which they have reduced a picture of this great leader and quoted his words thirty years ago. I think I knew Samuel Gompers as well as the people who are paying for the printing of these posters. I know also that some of the same interests who now so willing to pay money to induce workers to follow Samuel Gompers' leadership were willing, when those words of his were uttered, to pay money to get workers to forsake his leadership. I knew Samuel Gompers as a progressive leader—one willing and ready to change his views with the changing times. True to this tradition, the American Federation of Labor, which he founded, has changed its position regarding health insurance to meet the changed conditions of our times.

Working people were shocked, just as other people were, by the extent of physical unfitness that was revealed by the Selective Service examinations.

Our people do not minimize the importance of the maintenance of satisfactory healthful conditions as they affect their life on the job and at home. They know that good housing, adequate nutrition and other environmental factors contribute materially toward good health. To listen to some of the opponents of health insurance, however, you might conclude that if workers had these things they would not need doctors, nurses or hospitals. They should know better, especially the doctors among them.

Out of their own family experiences working people have come to realize that the methods of meeting the costs of medical care have a direct and practical relationship to the availability of that care. They know that generally individual savings do not provide a practical way of meeting these costs for the very simple reason that neither the time nor the amount of savings needed can be predicted. And we know that the desperate resort to the "loan shark" often arises from the necessity of paying the cost attendant on sickness and that the largest single reason for the cashing of war saving bonds is illness.

. . . . . .

We in the American Federation of Labor have on occasions been charged with inconsistency because we have opposed compulsory arbitration and other forms of compulsion and adhered to our traditional principle of voluntarism while at the same time embracing compulsory health insurance. We do not feel that our position is in the least in violation of our traditional principle as the element of compulsion in health insurance is confined to the matter of coverage and to the payment of contributions. In other forms of compulsory legislation there are embodied compulsions that seriously limit the basic freedoms of citizens, the compulsory features of our public education system, where our children are required to attend school, and all property owners are required to support the system. To carry over into a discussion of this problem the usual connotations associated with the word "compulsory" as opposed to "voluntary" confuses rather than clarifies the issue. As a matter of fact, the plans of some of the voluntary programs have demonstrated that they can be quite undemocratic. Those, for example, now being advocated so vigorously by some of the medical societies place complete control of the plan including the expenditure of the funds in the hands of a single group whose members have a direct pecuniary interest in their operation. They are completely devoid of any standards to govern the quality of service to be provided and provide for no representation on the part of those who are to pay their costs.

Past experience of workers, particularly with certain types of contract care, have led them to be cautious about any proposal which might affect the quality of service. In our opinion, the passage of this bill would definitely encourage high quality medical care. Doctors with whom we have consulted have informed us that when the ability of the individual patient to pay is a factor in his prescription of treatment, as it is under the present system, the best quality of service is often denied.

Especially during the past several years many of our unions have developed medical care programs for their members. Our people naturally want to know whether the adoption of a national health program would permit the continuance of these cooperative endeavors. During the preparation of this legislation we insisted on provision of the continuance of these plans being included, and we are satisfied that the provision is adequate. We are convinced that the bill makes ample provision for utilizing existing services and actually encourages the establishment of new ones when they are able to meet standards of service.

One of the questions which workers always ask when these proposals are under discussion is "Under the plan will we be able to choose our own doctor and our own hospital?" I am very sure that the proposal for the establishment of health insurance would not have received the widespread support that it has among our trade union people if they were not assured that the freedom of choice of physician would be preserved and actually improved. Our people are no different from others in that they cherish the personal relationship between doctor and patient and we have insisted that the provisions in this respect make doubly sure that free choice is protected. Actually, we feel that the bill, if adopted, would in a great many instances extend the principle of free choice as under our present system of payment; the actual choice of physician on the part of those in dire need of service is limited to the number of doctors who are willing to render service in the face of the possibility or even probability that the patient will not be able to pay.

Our membership is concerned about the degree to which any proposed legislation threatens to set up any centralized or autocratic control. Despite the contentions of the opposition, we are convinced that in S. 1606 there is established a fair balance between administrative responsibilities and democratic administration. Certainly officials of government agencies are given duties to perform and they are properly given the necessary authority to carry out these duties, but their authority is limited through a system of checks and balances. The rights of insured persons and of persons and agencies rendering services are carefully spelled out, and rights of appeal from decisions are provided. In addition, the Surgeon General is specifically directed to decentralize the administration through the states and localities.

The members of this committee are aware that the proposal for national health insurance has been subject to serious attack from various quarters. We do not say that all of those who oppose this measure and who are in disagreement with us are dishonest men. We do say, however, that some of the organizations which have been busily stirring up opposition to this bill, depending largely on false and misleading slogans and expending huge amounts of money, should be thoroughly investigated. I say quite frankly to the members of this committee that in our opinion you will not have fullfilled your responsibility to the public in these hearings unless the sources of the funds for some of these organizations have been thoroughly investigated and made known to the public. The people of the country have a right to know and they have a right to expect from this committee what individuals and what corporations have contributed to the misleading campaigns of such organizations as the National Physicians' Committee for the Extension of Medical Service and the Association of American Physicians and Surgeons, Inc. I have tried to make clear the reasons on which the American Federation of Labor bases its support of this bill. Our purposes and our records are open and the basis of our support is common knowledge. We think that the reasons for the opposition of the organizations I have named and their allies should be made equally public.

Senator Donnell asked whether or not Mr. Murray had investigated the probable cost under S. 1050.

Senator Donnell quoted Earl E. Muntz who says:

"This would raise the estimates previously given to the following totals:

"1. Based on Senator Wagner's figures and remarks, $11,625,000,000.

"2. Based on Tax Foundation study, $11,787,000,000.

"3. Based on author's estimate, $13,405,000,000."

I take it that is Mr. Muntz's estimate.

"4. Based on Hirschfield's study, $14,625,000,000."

I understand that is Mr. Gerhard Hirschfield.

SENATOR DONNELL: As I understand this document, in arriving at this federal subsidy he is assuming a 4 per cent contribution from employers and a 4 per cent contribution from employees and bases his view on the proposition that over and above that 4 per cent contribution from employees and 4 per cent contribution from employers there would be necessary federal subsidy of more than 50 per cent of these entire figures to which he refers. MR. GREEN: Fifty per cent of that total?

SENATOR ELLENDER: I agree with you. The point is, though, that in the event that the 4 per cent from employers and 4 per cent from employees is not sufficient, then you would advocate that the federal government dip into the treasury for the purpose of getting sufficient funds to make the program go along? MR. GREEN: Well, that should be reduced to the lowest possible cost. Because we do not want it to be a purely paternalistic affair. We base it on the principles of insurance. That is

what I emphasize in this statement, a contribution by employers and employees to the cost of providing the insurance payments, hospital care, medical care, laboratory care, special care, specialists, whatever may be needed in order to protect the health of the nation. The health of the nation; that is the point.

(Senator Donnell brought out that the costs might be 9 per cent. Mr. Green, aided by Mr. Cruikshank, indicated it might be necessary to diminish the coverage.)

SENATOR DONNELL: You also referred, Mr. Green, in your testimony, to the figures of physical unfitness revealed by the Selective Service examinations, and I quote this language from your statement:

"With the whole record now before us, these figures are more shocking than appeared at first. Where we have been saying that a third of our young men were found physically unfit for the 'duties of citizens in wartime,' to use General Hershey's phrase, actually it is now revealed that fully a half of the young men failed to meet the army's standards."

What is the source, Mr. Green, of your statistical information there? MR. GREEN: Selective Service.

SENATOR DONNELL: Selective Service. Now, I hold in my hand a document which I am told is from the Selective Service official figures. Am I right in that, doctor? DR. GOODRICH: Yes.

SENATOR DONNELL: And I observe these facts, if I may summarize just a little. This is the figure at the top. The "total number of rejections" were set out as 4 million 49 thousand, which I understand from a penciled note to me is 30 per cent of all registrants examined. Also, in this 4 million 49 thousand, there are a considerable number who as I understand it are persons whose rejection was not cast as the result of facts arising from inadequate medical care or from disability which would disable a person from normal civilian activity. For instance, here is "mental diseases," 657,100. "Mental deficiency," 563,300. Then there is a series of physical defects, "eyes," 206,100; "ears," 156,100. Now, I shall submit later for the record more in detail on this, but the figures as given to me by my informant indicate that of the 4 million 49 thousand persons rejected, of that 100 per cent, 70.7 per cent were the result not of inadequate medical care or disability from normal civilian activity. I am wondering whether or not your investigation and analysis of the Selective Service figures indicate substantially the same conclusions with respect to those figures? MR. GREEN: I have not gone into that in detail in the way you have pointed it out.

SENATOR DONNELL: Yes, sir. MR. GREEN: But I have accepted the Selective Services report, and, of course, the "eyes" and "mental deficiency" and "mental trouble," "eye trouble," "ear trouble," all of that may mean that if these people had been given proper medical care and attention for eyes and ears and mental deficiency they might have been restored to normal life.

SENATOR MURRAY: At that point, Mr. Green, is it not true that most of the eye defects in the country occur at the time of birth?

MR. GREEN: That is what I say.

SENATOR MURRAY: Due to inadequate attention?

MR. GREEN: Most of the eye troubles occur during the infant period, many times, and sometimes during the birth period. If you take a poor man, he has not the money to go out and get a specialist. Under this plan they might save a lot of those eyes, and that is what we are trying to do, save them.

SENATOR DONNELL: As I stated in my question, I shall go into this matter more fully when we have the physicians on the stand.

SENATOR MURRAY: We would be glad to have the author of that appear as a witness.

SENATOR DONNELL: Dr. Goodrich, from my state, furnished this, and he has in turn selected this from the Selective Service records. DR. GOODRICH: Yes, sir.

MR. CRUIKSHANK: Those are total rejections. SENATOR DONNELL: They are.

MR. CRUIKSHANK: The difference in the figures is largely that that is a rejection figure, whereas the Selective Service figures we used include the Army figures on the number of corrections and the number of discharges after induction, which brings them up to about 50 per cent.

SENATOR MURRAY: So that under the Selective Service many young men were brought into the service who had to be discharged. MR. GREEN: That is right. They found from experience that they were deficient.

SENATOR DONNELL: I shall examine into that more thoroughly, Mr. Chairman, with the permission of the committee, a little later.

I would like the record also to show that there appears in this exhibit from which I have been reading this line:

"Mental deficiency. (1)"

Then the figures 563,300; the per cent as 13.9. And that note "1" appears as follows:

"includes registrants rejected for educational deficiency before June 1, 1943 and for failure to meet minimum intelligence standards after that date, as well as those rejected for mental deficiency."

I offer that for the record.

SENATOR MURRAY: I might suggest at that point that many of those cases where they were rejected because of mental deficiency or educational deficiency may be due, more or less, to the failure of an adequate health care system in the United States. MR. GREEN: Oh, yes, certainly. Certainly, Senator.

(Mr. Green and Senator Donnell differed in their interpretation as to the powers of the Surgeon General and the Advisory Board.)

SENATOR DONNELL: I know you are perfectly honest in thinking that, and I might be mistaken, but I think the language of subdivision (j) on page 50 vests that particular authority exclusively in the Surgeon General with no remarks. However, at any rate, the Advisory Council is merely advisory and not vested with authority to determine; that is correct, is it not? MR. GREEN: I think this is a little different. I think by implication, at least, the Surgeon General is required to carry out the advice of the Advisory Council.

SENATOR DONNELL: Do you think there is any legal obligation in this bill? MR. GREEN: Probably not, but a moral obligation.

SENATOR DONNELL: Then you think the ultimate right is not in the Surgeon General but in the Advisory Council? MR. GREEN: I think in most of the questions that will come up that it will rest with the Advisory Board.

SENATOR DONNELL: Do you not think the bill should be clearly stated to the effect that the Advisory Council makes the decision and that that decision supersedes that of the Surgeon General? MR. GREEN: If there is any conflict. Either that it is the Surgeon General or the Advisory Board.

SENATOR DONNELL: As I read the bill, and I may be in error, but as I read the bill what I have read on that question in the bill would seem to indicate that the Council is an advisory council, and that the Surgeon General is not legally obligated to follow its recommendations. MR. GREEN: We will go into that.

SENATOR DONNELL: Very well. The point I am making is this: As I see it, Mr. Green, today if you or I were to go to this doctor I have spoken of he could decide for himself whether or not he had arrived at the maximum of his capacity, and there would be no government official to tell him whether he had or not? That is correct, is it not? MR. GREEN: Well, you must take the situation as you find it.

SENATOR DONNELL: Your statement is that you feel this committee would be derelict in its responsibility to the public unless the source of the funds for some of these organizations had been thoroughly investigated and made known to the public. May I ask you if you have investigated the attitude of the American Medical Association with respect to this compulsory health insurance? MR. GREEN: In what respect? As I understand it, the American Medical Association is opposed to it.

SENATOR DONNELL: Did you mean, though, by reference here to these various organizations the source of whose funds should be investigated, did you mean to include the American Medical Association? MR. GREEN: I certainly did.

SENATOR DONNELL: You think that association should be included? MR. GREEN: I certainly do.

SENATOR DONNELL: You know that that association does contain a very large proportion of the practicing physicians and surgeons in the country? MR. GREEN: Yes, sir.

SENATOR DONNELL: And it is considered generally a very reputable organization? MR. GREEN: That is right.

MR. CRUIKSHANK: May I make a comment on that, Mr. Chairman? SENATOR MURRAY: Yes.

MR. CRUIKSHANK: Some time ago Miss Florence Thorne and I, both of whom were on President Green's staff, received a request from a committee of the American Medical Association to come over to the Mayflower Hotel in Washington to discuss with them the various proposals. We consulted with President Green, and he told us by all means to consult with them, as representatives of the predominant group of the medical association. We went over; and they, in the course of their discussions, asked us if we would be willing to confer with a committee of the American Medical Association on health insurance provisions, and particularly the provisions of the

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Wagner-Murray-Dingell bill. I think I can say that they were somewhat surprised when we responded that we would be very glad to confer with them any time, any place, at a meeting of their choosing. We followed that up with a confirming letter. That was over a year ago, and we are still waiting the invitation of the American Medical Association to confer with them on this problem.

SENATOR MURRAY: I might ask there, do you infer from that that they had no intention of discussing these problems with you at the time, and merely expected you to refuse to consult with them? MR. CRUIKSHANK: We can only go on the record, Mr. Chairman. The indication at the meeting was that they were somewhat surprised by our ready acceptance of their offer, and we have not yet received the invitation to confer with them.

SENATOR DONNELL: Do you recall to whom your letter was addressed? MR. CRUIKSHANK: It was the chairman of the committee; and the name of the committee has slipped my mind.

SENATOR PEPPER: Mr. Green, you did not have to make an extended investigation or inquiry to discover the attitude of the American Medical Association? MR. GREEN: Certainly not.

SENATOR MORSE: Mr. Chairman, I would like to discuss with Mr. Green a problem which may not seem at first glance to be directly connected with this bill, but I think it is pretty underlying as we come to consider the philosophy of government that we want to have maintained in this country. Now, I am sure that Mr. Green's answer will be in the affirmative to my inquiry, whether or not it is not true that the American Federation of Labor believes that the economy that can best maintain a decent standard of living for the American workers is a private property economy? That is true, is it not? MR. GREEN: That is right.

SENATOR MORSE: And that in order to maintain a private property economy we are going to have to maintain in this country to the maximum extent possible the profit motive, subject to regulations of government, that will protect people from exploitation under that system. That is correct, too, is it not? MR. GREEN: That is correct.

SENATOR MORSE: And would you agree with me that we are faced in this country, as so many nations of the world are faced, with competition among ideologies as to economic forms that ought to prevail, and to be perfectly specific about it, we might as well face the fact that probably in a decade ahead there is going to be a considerable movement in this country for some form of state socialism in various activities of our economic life, and that to the degree that state socialism comes to dominate this country, to that same degree, of course, the rights of workers as well as other individuals must be subordinated to a master state? Would you agree to that? MR. GREEN: I agree with that.

SENATOR MORSE: And that in this struggle, however, for the government to fulfil what I think are its minimum obligations, at least, to protect, as I have said so many times, the economic weak from the exploitation of the economic strong, our workers and people generally say to a democratic form of government "you do have, as a government, the responsibility of removing from us as free men a constant fear of economic insecurity"? Do you think that is true? MR. GREEN: That is quite true, Senator. All of that is sound.

SENATOR MORSE: We might as well face the fact that inherent in the labor movement in this country is the demand of free workers that this economy of work under a private property form be so operated as to reduce to the minimum the fear of economic insecurity, and thus we who call ourselves "liberals" are constantly fighting for minimum wage legislation, or legislation that sets up minimum economic and social standards that will protect our people as a whole, and, in my judgment, protect the preservation of private property economy. Now, with that movement going on in the decade ahead, would you agree with me that one of the demands is going to be that the government use its resources in cooperating with the medical profession of this country to see to it that the fear of economic insecurity constantly hovering over the roof of every house in this country, at least of our medium and low income groups, be removed by providing those householders with decent medical care under a system which at the same time preserves to the greatest degree possible the private property conception and at the same time fulfils the obligation of the government to protect our people from the danger of ill health?

Or, to put it this way: would you agree with me that the law of survival of the fittest still prevails, even in our civilized society, but that the workers of this country are insisting that the law of survival of the fittest should not operate on the basis of economic ability of the individual to survive as far as health is concerned? MR. GREEN: Yes. You have brought out some very convincing points which I will agree with.

SENATOR MORSE: There is just one more point. Would you agree with me that there is an obligation on the part of the medical profession to come forward with a program that will remove this fear from the workers of this country and still protect to the maximum degree possible and at the same time remove the constant fear of economic insecurity caused by ill health; to come forward with a plan that will remove that fear and still give to the American medical profession this so-called private property economy that they claim under this proposal that you have testified in support of here to a degree is weakened? I am not saying it is or is not. Do you agree that there is an obligation on that profession to demonstrate and come forward with a plan that removes that fear that is hovering over every roof in the land? MR. GREEN: I agree heartily with that conclusion, and I want to say to you that never in the history of America did such an opportunity present itself to the medical profession, to organized labor and to business groups to contribute toward the maintenance, the establishment and maintenance of our free enterprise system than now. SENATOR MORSE: I agree with you.

(Mr. Green discussed at great length his part in securing workmen's compensation legislation in Ohio.)

SENATOR PEPPER: I was just going to say that we all know that one of the most severe criticisms leveled against this bill is that same old catch word of "socialism." MR. GREEN: That is right. SENATOR PEPPER: They say "Are you in favor of that Wagner-Murray-Dingell bill? That is that socialized medicine bill." Do you regard, Mr. Green, a national law which requires compulsory membership in a national insurance program as being socialism in any form? MR. GREEN: None whatever. SENATOR PEPPER: Is it any different in principle from the present law that nobody has suggested the repeal of what has been on the statute books of the nation by which under national compulsion employees and employers contribute to a fund to insure the worker against unemployment in the country? MR. GREEN: The same principle is involved. SENATOR PEPPER: Exactly. MR. GREEN: There is no difference. There is nothing socialistic about that.

SENATOR PEPPER: In the various states of the union we have compulsory school laws, where parents are required by the state to send children to school in the public interest, and we do not want to call those things socialistic. MR. GREEN: No.

SENATOR PEPPER: Socialist medicine would perhaps be the kind in Russia, where the patient pays nothing at all; where the state does the whole thing? MR. GREEN: Yes. The whole thing.

SENATOR PEPPER: And that, of course, is not this bill in any sense. MR. GREEN: This is positively insurance, based on our sound insurance system.

SENATOR MURRAY: This maintains the American medical profession in this country and will have the effect of raising the income of a great majority of the doctors of the country. MR. GREEN: That is right.

SENATOR DONNELL: Mr. Green, under this plan in S. 1606 doctors who are paid from the monies raised in pursuance of the development of this plan will be employees of the government to that extent, will they not? MR. GREEN: No. I would not regard them as employees of the government. They are simply being paid out of a fund created through contributions from employers and employees. SENATOR DONNELL: You would not regard them as employees of the government? MR. GREEN: No.

SENATOR DONNELL: Mr. Green, while I appreciate the comments made with respect to the health of our people, after all the question here is the means of bringing that about. There may be an honest difference of opinion as to that? MR. GREEN: That is right. But the trouble is, we have been experimenting for how long has the government been here: one hundred and seventy-five or two hundred years?

(Senator Donnell brought out that Mr. Green has no confidence in the success of voluntary plans.)

SENATOR DONNELL: Have you studied what happened in England with respect to initiative and the development of ability among the physicians over there? MR. GREEN: Perhaps not as much as I should. Do you know about the health insurance they passed over there in England?

SENATOR DONNELL: But I want to say this: what I am asking you about is whether or not you have studied the English experience with a view to determining what has been the effect on the development of initiative among the English physicians? Have you studied that? MR. GREEN: No, I have not gone into that.

SENATOR DONNELL: We are studying here, trying to find out things. We are happy to have testimony from anybody who knows and can give us advice. I do not claim to know all about this, and what I do not know fills more volumes than what I do know, which is very small. In the matter of the experience of New Zealand, they have had experience which for some reason has not proved satisfactory. Do you know why that is? MR. GREEN: I do not know. I could not tell you, Senator.

SENATOR DONNELL: My understanding is that in New Zealand their plan has pretty largely failed. It may be due to something entirely contrary to the basic principles; I do not know. MR. GREEN: I am sorry. I could not give you information on that, because I admit I have none.

SENATOR PEPPER: Senator Donnell a minute ago referred to the 21 million covered under the Blue Cross plans. I am sure the Senator did not mean to imply that in excess of about 3 per cent of the people of this country have anything like the total coverage under the voluntary plans that is provided in this bill. There are perhaps 21 million people who have different kinds of coverage. SENATOR DONNELL: Yes.

SENATOR PEPPER: But our subcommittee disclosed facts, after comprehensive examination of all voluntary plans in existence, that only about 3 per cent of the total people in the country have anything like the total coverage of this bill. MR. GREEN: Yes.

SENATOR DONNELL: I had no intention of leaving any thought like that.

SENATOR PEPPER: We also disclosed in our inquiry that under the most favorable system the voluntary plans were not a success. For example, that the Department of Agriculture, through the Farm Security Administration, tried in the rural area and got, through experimenting and subsidizing the voluntary plans with federal funds, poor results. Even there, where they were voluntary plans in character, the ones who needed the medical care the most dropped out first or failed to join. MR. GREEN: That is the way it operates.

SENATOR PEPPER: So the Department of Agriculture, in a brochure they prepared at the request of this committee, advised us that under any most favorable system the voluntary plan had not been a success. MR. GREEN: That is my understanding.

(The documents referred to are as follows:)

(Senator Murray submitted for the record statements from the State Federations of Labor of Kentucky, Kansas, Connecticut and West Virginia and from the Building Service Employees Maintenance Union, the Atlanta, Ga., Federation of Trades and the Central Labor Union of North Platte, Neb.)

Statement of Dr. W. Montague Cobb, Representing the National Medical Committee of the National Association for the Advancement of Colored People

DR. COBB: My name is William Montague Cobb. I am a physician, professor of anatomy in the School of Medicine of Howard University, president of the Medico-Chirurgical Society of the District of Columbia, and I am appearing as a member of the National Medical Committee of the National Association for the Advancement of Colored People.

It is my honor to represent, as a member of its National Medical Committee, the National Association for the Advancement of Colored People, in support of the National Health Bill, S. 1606. The National Association, founded in 1909, has over 520,000 members, organized into twelve hundred branches, youth councils and college chapters, in forty-three states. It is the oldest and largest organization devoted to the securing of equal rights and opportunities for the more than 14,000,000 citizens who constitute America's most disadvantaged tenth.

Even though health conditions in the country as a whole are far from satisfactory, the plight of the Negro is worse than that of the white. In 1940, the latest census year, the standardized death rate for the country was 8.2 per thousand for whites and 14.0 for Negroes, a mortality rate 71 per cent higher than the white. In 1930 the Negro excess was 82 per cent. In that year the Negro mortality in the registration states was 81 per cent higher than the white in rural areas and 95 per cent higher in cities, a fact of especial significance in view of the continued urban migration of Negroes.

In 1940 the life expectation of Negroes at birth was about ten years less than that of whites, the expectancy being for males 52.26 years in Negroes and 62.81 years in whites, and for females 55.56 years in Negroes and 67.29 years in whites.

The consistent population increase shown by the Negro in spite of the high mortality and morbidity he has suffered has been due chiefly to his high birth rate which in 1942 was 23.3 as compared with 20.7 for the white. But the reproductive process in the Negro is attended with almost double the rate of casualties that prevails in the white. In 1942 the Negro maternal death rate was 5.5 and the white 2.2; the Negro infant mortality rate was 64.2 and the white 37.3; and the stillbirth rate was 50.5 in the Negro and 25.5 in the white.

In retrospect, this approximately current unfavorable health picture shows considerable improvement over the past. The Negro mortality rate has declined from 24.1 in 1910 to 14.8 in 1943. Since 1910 Negro life expectancy has increased about ten years, or 25 per cent. There has been significant decrease also in reproductive mortality.

The National Health Survey of 1935-1936 found that the amount of disability per person due to illnesses which incapacitated for a week or longer was 43 per cent higher in the Negro than in the white population. The higher disability rate for Negroes was due chiefly to chronic diseases, which disabled the average Negro eight days per year compared with five days for the average white person. The higher rate was observed for all disease groups. Pneumonia was almost twice as frequent in Negroes as in whites and certain chronic diseases—the cardiovascular-renal group, rheumatism, and asthma and hay fever—were of significantly higher rate.

The Survey noted that improvement of standard of living associated with a rising income increased the health status of Negroes as measured by various indicia of illness. The average Negro in the non-relief class experienced only one half the disability per year as the Negro on relief. The survey concluded that low economic status, rather than inherent racial characteristics in reaction to disease, appeared to account principally for the higher disability rate in Negroes.

The association I represent affirms that the vision of separate, but equal facilities for the care of Negro population in those areas where that population is concentrated has always been a myth, and would prove again to be a myth should it be attempted. Specifically the association wishes to declare against the principle in the application of this bill to the development of separate hospitals, separate health centers, separate training programs and separate public health programs. We wish to declare emphatically for the elimination of the entire racial separation practice in the construction of any new facilities, and in the operation of all new plans for the distribution of medical care and for the integration of Negro professional personnel into all levels of the plan according to qualification. Recent experience with attempts to assure adequate professional personnel through the separate system of professional education have proved how sterile and ineffective is this plan. It has resulted in there being not only inadequate numbers of general practitioners, (and nurses), but also of specialists in the respective fields.

In many states, including the entire South and the District of Columbia, local medical societies have consistently barred Negro physicians from membership, and the American Medical Association, through the technicality of not admitting to its membership physicians who are not members of their local societies, has extended the effect of this racial discrimination. This Association, therefore, would see no outlook but the perpetuation of these discriminatory practices in the administration of a national health program and advocates that the administration be entirely in the hands of responsible public officials.

(The questioning was limited to the auspices under which Dr. Cobb appeared. It seemed he had been asked by the chairman of his board of directors to appear.)

Statements of Pauline M. Newman, Representing the National Women's Trade Union League of America, and of Miss Elisabeth Christman, Secretary-Treasurer of the National Women's Trade Union League of America

MISS NEWMAN: The National Women's Trade Union League of America, with a direct and affiliated membership of more than a million persons, wishes to go on record in support of the Wagner-Murray-Dingell National Health Act.

(Miss Newman told of the advantages of a prepaid plan.)

We are told that good health is purchasable. Certainly; so are precious jewels in Tiffany's. How many of us would even dream of going to Tiffany's? How many of us can afford to purchase medical care from private physicians? Suppose, Mr. Chairman, we try and see what an ordinary diagnostic examination, or, as our English friends call it, an "over-hauling," in a private physician's office comes to:

Jennie the operator decides to have such an examination and finds that the fee for the first visit to the doctor is $5. This doctor is not a "top notcher," but an average, reputable man. He will want some laboratory tests—a blood count and urinalysis will cost $5. No routine examination should be made without a chest x-ray; that will cost a minimum of another $10.

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If there is nothing organically wrong with Jennie, the doctor will prescribe some medication which will come to about $2. Here you have a total of $22 for an incomplete medical check-up.

I repeat that this examination is incomplete. It does not include an electrocardiogram. It does not include a gastro-intestinal x-ray examination and the additional tests which are essential to a thorough diagnostic examination. And yet Jennie has paid $22 merely to find out if anything is wrong with her health! Do you see now why it is that Jennie and her kind think long and hard before they will go to a private physician? Their limited income does not allow for such luxury. It is this inability to meet the cost of medical care that prevents the wage-earner from consulting a physician until he is no longer able to work, or to see a dentist until he is no longer able to endure his toothache.

At this point some one may well ask "Why should not Jennie and her kind use the services of our public health clinics?" This is a pertinent question. But I think I can give you the reasons why Jennie and her kind do not like to go to those clinics:

1. She will, in all probability, have to absent herself from her work a whole day. The services of those clinics are not now available in the evenings.

2. Jennie does not care for charity, any more than do the rest of us. In fact Jennie would much rather pay for medical or any other service she gets provided the cost is within her ability to pay. Jennie and her kind do not want to get anything for nothing.

3. And, finally, Jennie will tell you that if our public health clinics are to be used by people like herself they will have to be of a different type from those with which we are now familiar. I happen to know quite a bit about those clinics and I am here to tell you that they are not what they might have been—the pride of a community.

The physical surroundings alone are enough to discourage a sick person from going there—those hard and uncomfortable benches; the cheerless and frosty atmosphere; the lack of privacy; the absence of kindliness and understanding; the needless questioning; the humiliation; the hard-boiled attitude—all this and more is cause enough for Jennie and her like to stay away from these clinics. Until these health clinics are infused with a spirit of helpfulness and real desire to render decent service, Jennie and people like her will be reluctant to use the public health clinic.

I maintain, Mr. Chairman, that while we have made excellent progress in medical science, the fruits of this scientific knowledge are not now available to the working men and women of our land. But the most deplorable thing of all, I think, is the fact that even the clinics I have described above are non-existent in so many parts of this country! That this should be so is unbelievable, but it is a fact, as you gentlemen of the committee must know.

(Questioning by Senator Donnell concerned the nature of the Trade Union League and the manner of its function.)

SENATOR DONNELL: That is who come to this national meeting?

MISS NEWMAN: Yes, sir.

SENATOR DONNELL: When was the last one of those held, those meetings?

MISS NEWMAN: Last May we had a conference right here in Washington, with delegates coming from every one of our local affiliates.

SENATOR DONNELL: And you had six or seven hundred people at that meeting?

MISS NEWMAN: Not at the last conference.

SENATOR DONNELL: How many did you have?

MISS NEWMAN: At the last conference I should say that there were close to 100 delegates from our local units.

SENATOR DONNELL: That is close to 100 delegates?

MISS NEWMAN: That is right.

SENATOR DONNELL: When was that meeting held?

MISS NEWMAN: Last May.

SENATOR DONNELL: Here in Washington?

MISS NEWMAN: That is right.

SENATOR DONNELL: That is what you call the delegate meeting of your entire membership?

MISS NEWMAN: Just one moment. May I explain this: You remember, do you not, that conventions were forbidden for a time while the war lasted.

SENATOR DONNELL: Yes.

(To be continued)

Medical Legislation

MEDICAL BILLS IN CONGRESS

Army and Navy Medical Schools

A bill introduced by Representative Somers, New York, H. R. 6073, proposes the establishment of a school for the instruction of cadets in the theory and practice of medicine and surgery, to be known as the United States Military Medical School. The corps of cadets of the school will be selected on the same terms and conditions as cadets are selected and admitted to the United States Military Academy. Each cadet will agree to serve with the United States government for six years after graduation and will receive the same pay and allowances as are provided for cadets in the United States Military Academy. On graduation, any cadet may be commissioned as a second lieutenant in the United States Army, will receive his internship in an Army hospital on completion of which he will be assigned to duty with the Army or to duty in a hospital under the jurisdiction of the Veterans' Administration. Another bill introduced by Representative Somers, H. R. 6074, provides for the establishment of a United States Naval Medical School.

Barbiturates

H. R. 6178, introduced by Representative Rogers, Massachusetts, provides for the coverage of barbiturates under the federal narcotic laws. Another bill, S. 1986, has passed the Senate, proposing to bring the barbiturates within the purview of the narcotic laws applicable to the District of Columbia.

Miscellaneous

A bill to authorize the Veterans' Administration to employ retired officers without affecting their retired status, H. R. 5626, has passed the House. The purpose of the bill is to authorize the Veterans' Administration to employ between 20 and 25 retired medical officers to act as superintendents and directors of medical services in veterans' hospitals.

A bill relating to the prevention and control of water pollution, H. R. 6024, has been favorably reported by the House Committee on Rivers and Harbors.

S. 1850, to establish a National Science Foundation, has been reported without amendment by the Senate Committee on Military Affairs.

Legislation to authorize the Federal Security Administrator to assist the states in matters relating to social protection, S. 1779, has been reported without amendment by the Senate Committee on Education and Labor.

STATE LEGISLATION

Massachusetts

Bill Introduced.—H. 1784 proposes the creation of a board of registration of chiropractors and defines chiropractic as "the science of locating, and removing, by hand only, interference with the transmission or expression of nerve force in the human body, and the correction of misalignment or subluxations of the vertebral column. It excludes operative surgery, prescription or use of drugs or medicine, or the practice of obstetrics, except that the X-ray may be used solely for the purposes of examinations."

Bills Passed.—H. 1749 passed the house April 16. It proposes that the College of Physicians and Surgeons, a Massachusetts corporation duly organized and established in 1880, be dissolved.

S. 462 passed the house April 17. Relating to the replacement of a city board of health by a city health department, it proposes that the commissioner of health shall be a citizen of the United States who has been graduated from a medical school approved by the state authority for the approval of medicine schools and either shall be the holder of a degree of public health with at least two years' full time experience in a responsible position in public health service or shall have had four years' full time experience in a responsible position in such service. He shall be eligible to be registered to practice medicine under the laws of the state.

S. 464 passed the senate April 17. To amend the law relating to opticians, it proposes certain restrictions upon the type of advertising in which an optician may engage.

Mississippi

Bills Enacted.—H. 433 was approved April 9, 1946. It provides an appropriation of $5,000,000 to the Mississippi Commission on Hospital Care for carrying out the provisions of the law creating such commission and for the purpose of building, erecting and equipping, and contributing to the building, erecting and equipping of hospitals, nurses' homes and other facilities.

H. 699 was approved April 10, 1946. As reported last week, it authorizes the state board of examiners to proceed by injunction to prohibit any person from practicing any profession licensed under the supervision of said board when such person is not duly licensed so to practice, except persons practicing chiropractic, osteopathic or veterinary sciences. A copy of the bill as finally approved indicates that it also exempts persons practicing "drugless healing other than surgery."

H. 754 was approved April 9, 1946. It authorizes any municipality within the state, in the discretion of its governing authorities, to adopt sanitary codes or any other codes dealing with general public health.

H. 1137 was approved April 10, 1946. It provides additional appropriations for support of the medical school of the University of Mississippi and for the purchase of equipment and supplies therefor.

S. 256 was approved April 9, 1946. It provides for the treatment of charity patients in any hospital in the state approved by the Mississippi division of the American Cancer Society and equipped and prepared to treat cancer upon affidavits by the county health officer and one other reputable physician that the patient is in need of care, treatment and hospitalization because of cancer.

Missouri

Bill Enacted.—S. 424 was approved April 19, 1946. It transfers to the State Board of Medical Examiners powers and duties heretofore vested in the state board of health.

New Jersey

Bills Enacted.—A. 164 has become chapter 84 of the Laws of 1946. It amends the medical practice act by providing for an addition to the State Board of Medical Examiners of a chiropodist to have equal rights and privileges in all matters affecting chiropody.

S. 120 has become chapter 118 of the Laws of 1946. It provides for the establishment of a diagnostic center to be fully equipped with all modern scientific equipment and provided with a staff of competent specialists in the field of medicine, psychiatry and psychology, to the end that full and complete diagnostic services shall be available to any governmental agency desiring to secure a complete diagnosis of any individual having need for such services.

New York

Bills Enacted.—A. 1223 has become chapter 802 of the Laws of 1946. It provides for the examination, licensing and regulating of persons desiring to practice hairdressing and cosmetology.

A. 2686 has become chapter 898 of the Laws of 1946. It authorizes a town board, in lieu of employing a public health nurse or public health nurses, to contract with any nonprofit institution or agency wholly or partly under private control, organized to furnish visiting nursing or public health services and agree to pay fees specified in the contract for such services furnished to inhabitants of the town.

S. 1033 has become chapter 801 of the Laws of 1946. It provides for the licensing and regulating of the practice of barbering.

Rhode Island

Bill Passed.—S. 266 passed the senate and house April 18. It proposes a joint resolution to revivify the special Rhode Island public health laws survey commission and to appropriate funds to enable the commission to continue its work.

Coming Medical Meetings

American Association for the Study of Goiter, Chicago, June 20-23. Dr. Thomas C. Davison, 478 Peachtree St., N.E., Atlanta 3, Ga., Secretary.

American Association for the Surgery of Trauma, San Antonio, Texas, June 26-28. Dr. Gordon M. Morrison, 520 Commonwealth Ave., Boston, Secretary.

American Association for Thoracic Surgery, Detroit, May 29-31. Dr. Richard H. Meade Jr., Kennedy General Hospital, Memphis 15, Tenn., Secretary.

American Association of Genito-Urinary Surgeons, Stockbridge, Mass., June 20-22. Dr. Charles C. Higgins, 2020 E. 93d St., Cleveland 6, Secretary.

American Association of Plastic Surgeons, Toronto, Canada, June 3-4. Dr. Frederick A. Figi, 102 Second Ave., S.W., Rochester, Minn., Secretary.

American Association of the History of Medicine, Atlantic City, May 26-27. Mr. W. B. McDaniel II, 19 S. 22d St., Philadelphia 3, Secretary.

American Broncho-Esophagological Association, Chicago, May 31. Dr. Paul H. Holinger, 700 N. Michigan Ave., Chicago 11, Secretary.

American College of Physicians, Philadelphia, May 13-17. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Executive Secretary.

American College of Radiology, San Francisco, June 29. Mr. Mac F. Cahal, 20 N. Wacker Drive, Chicago 6, Secretary.

American Dermatological Association, Hot Springs, Va., June 10-14. Dr. Harry R. Foerster, 208 E. Wisconsin Ave., Milwaukee, Secretary.

American Federation for Clinical Research, Atlantic City, May 28. Dr. Richard H. Lyons, University Hospital, Ann Arbor, Mich., Secretary.

American Gastro-Enterological Association, Atlantic City, May 24-25. Dr. J. Arnold Bargen, 102 Second Ave., S. W., Rochester, Minn., Secretary.

American Laryngological Association, Chicago, May 29-30. Dr. Arthur W. Proetz, 3720 Washington Blvd., St. Louis 8, Secretary.

American Laryngological, Rhinological and Otological Society, Chicago, May 27-28. Dr. C. Stewart Nash, 277 Alexander St., Rochester 7, New York, Secretary.

American Neurological Association, San Francisco, June 26-28. Dr. Henry Alsop Riley, 117 E. 72d St., New York 21, Secretary.

American Ophthalmological Society, San Francisco, June 26-28. Dr. Walter S. Atkinson, 129 Clinton St., Watertown, N. Y., Secretary.

American Orthopedic Association, Hot Springs, Va., June 27-29. Dr. Charles W. Peabody, 474 Fisher Bldg., Detroit 2, Secretary.

American Otological Society, Chicago, May 31-June 1. Dr. Gordon D. Hoople, 713 E. Genesee St., Syracuse, N. Y., Secretary.

American Psychiatric Association, Chicago, May 27-30. Dr. Winfred Overholser, St. Elizabeth's Hospital, Washington 20, D. C., Secretary.

American Radium Society, San Francisco, June 28-29. Dr. Edward H. Skinner, 1103 Grand Ave., Kansas City 6, Mo., Secretary.

American Society for Clinical Investigation, Atlantic City, May 27, Dr. Eugene A. Stead Jr., Grady Hospital, Atlanta 3, Ga., Secretary.

American Society for Research in Psychosomatic Problems, New York, May 11-12. Dr. Edwin G. Zabriskie, 714 Madison Ave., New York 21, Secretary.

American Therapeutic Society, Atlantic City, May 11-12. Dr. Oscar B. Hunter, 1835 I St., N.W., Washington, D. C., Secretary.

Association for the Study of Internal Secretions, San Francisco, June 28-29. Dr. Henry H. Turner, 1200 N. Walter St., Oklahoma City, Secretary.

Association of American Physicians, Atlantic City, May 28-29. Dr. Joseph T. Wearn, 2065 Adelbert Road, Cleveland 6, Secretary.

California Medical Association, Los Angeles, May 7-10. Dr. George H. Kress, 450 Sutter St., San Francisco 8, Secretary.

Georgia, Medical Association of, Macon, May 7-10. Dr. Edgar D. Shanks, 478 Peachtree St., N.E., Atlanta, Secretary.

Illinois State Medical Society, Chicago, May 14-16. Dr. Harold M. Camp, 23 S. Main St., Monmouth, Secretary.

Louisiana State Medical Society, Alexandria, May 6-8. Dr. P. T. Talbot, 1430 Tulane Ave., New Orleans 13, Secretary.

Maine Medical Association, Poland Spring, June 23-25. Dr. Frederick R. Carter, 142 High Street, Portland 3, Secretary.

Massachusetts Medical Society, Boston, May 21-23. Dr. Michael A. Tighe, 8 Fenway, Boston, Secretary.

Minnesota State Medical Association, St. Paul, May 20-22. Dr. B. B. Sonster, Lowry Medical Arts Bldg., St. Paul 2, Secretary.

Mississippi State Medical Association, Jackson, May 14-15. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

National Tuberculosis Association, Buffalo, N. Y., June 11-13. Dr. Charles J. Hatfield, 1790 Broadway, New York 19, Secretary.

Nebraska State Medical Association, Lincoln, May 6-9. Dr. R. B. Adams, 416 Federal Securities Bldg., Lincoln 8, Secretary.

New Hampshire Medical Society, Manchester, May 14. Dr. C. R. Metcalf, 5 S. State St., Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, May 21-23. Dr. Alfred Stahl, 55 Lincoln Park, Newark, Secretary.

New Mexico Medical Society, Santa Fe, June 6-8. Dr. L. B. Cohenour, 221 W. Central Ave., Albuquerque, Secretary.

North Dakota State Medical Association, Bismarck, May 26-28. Dr. L. W. Larson, 221 Fifth St., Bismarck, Secretary.

Ohio State Medical Association, Columbus, May 7-9. Mr. Charles S. Nelson, 79 E. State St., Columbus, Executive Secretary.

Rhode Island Medical Society, Providence, May 15-16. Dr. William P. Buffum, 122 Waterman St., Providence 6, Secretary.

Society of American Bacteriologists, Detroit, May 21-24. Dr. Leland W. Parr, 1335 H St., N. W., Washington 5, D. C., Secretary.

South Dakota State Medical Association, Aberdeen, June 1-4. Dr. Roland G. Mayer, 22½ S. Main St., Aberdeen, Secretary.

Texas, State Medical Association of, Galveston, May 6-9. Dr. Holman Taylor, 1404 W. El Paso St., Fort Worth 3, Secretary.

West Virginia Medical Association, Huntington, May 13-15. Mr. Charles Lively, P. O. Box 1031, Charleston 24, Executive Secretary.

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Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Appointments to Southern California.—Dr. George C. Griffith, formerly of Philadelphia, and Dr. M. Paul Starr, Pasadena, have been appointed clinical professors of medicine at the University of Southern California School of Medicine, Los Angeles..

Changes in Health Personnel.—Dr. Miriam Hubbell, El Centro, has resigned as health officer of Imperial County, effective March 1, to join the Los Angeles County Health Department in Glendale.——Dr. Harold J. Franklin, formerly of Trenton, N. J., has been named acting health officer for Imperial County. ——Dr. Lenox S. Goerke, formerly of Woodland, recently discharged as lieutenant colonel from the Army Medical Corps, has been appointed director of the bureau of medical services of the Los Angeles City Health Department. Dr. Norman B. Nelson, Los Angeles, who formerly held this position, has become head of the department of public health at the University of California, Los Angeles. Dr. Goerke is returning to public health work after five years of army service, three years of which were with the selective service system and southern area headquarters in southern California. In November Dr. Goerke returned from duty overseas with the 89th division.

Warning of Smallpox Patient.—On April 5 a man was diagnosed as having smallpox after being granted shore leave in San Francisco April 2, the day after the steamship *La Salle*, from an oriental country, had been released from smallpox quarantine. The ship had been docked at Hunters Point April 2-4. The patient had boarded a public bus at Hunters Point. He had visited one Bank of America and one Western Union office, stopped at a restaurant to eat and attended two theaters, after which he had taken the public bus again to Hunters Point, where he ate in another restaurant there. The patient had fever on April 3 and probably on April 2, and a rash on April 4 and 5. The warning issued by the health officer of the city and county of San Francisco, Dr. Jacob C. Geiger, states that the employees of the Paramount and State theaters, which had been visited by the patient, had been previously vaccinated.

COLORADO

Spring Clinic.—The Mesa County Medical Society announces the revival of the annual Western Slope Spring Clinic, to be held in the City Library Auditorium, Grand Junction, May 12, the first in three years. The following, all of Denver, will speak:

Dr. William R. Lipscomb, What to Consider the Diagnosis of Intervertebral Disk.
Dr. George B. Packard, Gastric Ulcer.
Dr. Maurice Katzman, Significance of Heart Murmurs and the Use of the Electrocardiogram.
Dr. Kenneth D. A. Allen, The Findings Depicted by a Simple Scout Film of the Abdomen.
Dr. Bernardine T. McMahon, Chest Problems in General Practice.
Dr. Charles B. Kingry, Interpretation and Use of the Newer Laboratory Tests.

DISTRICT OF COLUMBIA

Personal.—Dr. Alfred Golden, Washington, has been named assistant professor of pathology at the University of Tennessee College of Medicine, Memphis, and director of laboratories at the Baptist Memorial Hospital, Memphis.

John Lawlah Resigns as Dean.—Dr. John W. Lawlah, dean and professor of radiology, Howard University School of Medicine, Washington, announced his resignation as dean to devote his entire time to work in his specialty. The Washington *Star* announced that Dr. Lawlah had requested his resignation to take effect April 1.

FLORIDA

Special Wartime Permits to Expire July 1.—All special wartime certificates permitting medical doctors to practice in Florida without passing the regular board of medical examiners tests will expire July 1. About sixty physicians, mostly retired doctors from other states, were granted special licenses by the state defense council and board of medical examiners to help fill the gaps left by Florida doctors who were called into military service. If they want to continue their Florida practices after July 1, they must obtain certificates of proficiency from the basic science board, which meets June 4, and then pass the board of medical examiners tests on June 24-25. Florida law does not provide for recognition of medical licenses granted in other states or permit temporary peacetime licenses, according to the Tampa *Tribune*.

GEORGIA

New Health Unit.—The counties of Thomas and Grady have joined together to form the Thomas-Grady health unit, with headquarters in Albany. Dr. Arthur W. Hill, Atlanta, formerly with the State Department of Public Health in malaria and hookworn service, has accepted the position of commissioner of health.

Personal.—Dr. Guy V. Rice Jr., Albany, recently returned from military service, has been named assistant director of the division of maternal and child health of the Georgia State Board of Health, succeeding Dr. William B. Harrison, who resigned to become regional medical director for both the northeastern and northwestern sections.

ILLINOIS

Herrick House Opens for Year Round Service.—Herrick House in Bartlett, one of the few homes in the country for children convalescing from rheumatic fever, opened April 4 for year round service after being operated heretofore only during the four months in the summer. The 40 children who were admitted were patients in various hospitals. They will spend about three months learning how to live comfortably and usefully and were selected by social agencies in Chicago and the Fox River valley. Herrick House is operated by the Sunset Camp Service League. It functions under a medical advisory committee headed by Dr. James B. Herrick, for whom the institution is named, and Dr. Stanley Gibson, both of Chicago.

Chicago

Northwestern Class of 1911 Holds Reunion.—The thirty-fifth reunion of the class of 1911 of the Northwestern University Medical School will be held June 1, at the Hotel La Salle. Dr. Louis Rudolph, 55 East Washington Street, is secretary.

Alumni Reunion.—The Alumni Association of Loyola University School of Medicine will hold a meeting during the session of the Illinois State Medical Society in Chicago, May 15. At a luncheon James T. Hussey, S. J., president of Loyola University, will speak. Reservations should be made with the Alumni Office, 6525 Sheridan Road. Rev. G. G. Grant, S. J., is secretary of the alumni association.

Roger Harvey Named Professor of Radiology.—Dr. Roger A. Harvey, assistant professor of medicine and radiology at the University of Rochester School of Medicine and Dentistry, has been appointed professor and head of the department of radiology at the University of Illinois College of Medicine, effective August 1. The appointment fills the vacancy that occurred with the death in 1944 of Dr. Adolph Hartung. Dr. Harvey graduated at the University of Rochester in 1939.

Earl Kleinschmidt to Direct Tuberculosis Institute.—Dr. Earl E. Kleinschmidt, formerly health commissioner of Toledo and recently released from military service, has been named director of the Tuberculosis Institute of Chicago and Cook County. He will succeed Mrs. Theodore B. Sachs, who has retired after more than twenty years' service. Mrs. Sachs is the widow of Dr. Theodore Sachs, founder of the institute, who died in 1916.

Executive Secretary Named for Association for Crippled.—William C. Harder, who for the past three years as regional supervisor for federal works directed programs designed to assist war impacted communities in Illinois, Indiana, Michigan, Ohio, Kentucky and Wisconsin, has been appointed executive secretary of the Illinois Association for the Crippled, 116 South Michigan Avenue. He succeeds Edgar T. Stephens, who recently became chief of rehabilitation services for the state of Illinois.

Research in Blood Diseases.—The Hematology Research Foundation invites applications for the Ruth Reader fellowship for research in blood diseases. The value of this fellowship is $1,500 for one year. It is offered to workers of any race or creed in America. Applications must be submitted no later than June 1 to Dr. Ludvig Hektoen, 21 West Elm Street, Chicago, the chairman of the medical advisory council for the foundation. The council will choose the applicant and the institution in Chicago, in which the work is to be done, on the basis of merit.

Ray Brown Named Superintendent of Clinics.—Ray E. Brown, assistant superintendent of the University of Chicago Clinics, has been appointed to succeed Dr. George O. Whitecotton as superintendent, it was announced April 23. Dr. Whitecotton, who has been superintendent of the University Clinics since 1939, resigned to become medical director of the Alameda County Institutions and superintendent of Highland-Alameda County Hospital of Oakland, Calif. (THE JOURNAL, March 16, p. 725). Mr. Brown, who was first appointed to the hospital staff in September 1945, was superintendent and professor of hospital administration of the North Carolina Baptist Hospital of the Bowman Gray School of Medicine, Winston-Salem, N. C., from 1943 to 1945.

Membership to Medical Center Commission.—Dr. Raymond B. Allen, executive dean of the University of Illinois Chicago Colleges, was elected president of the Medical Center Commission at a meeting, April 18, at the University Club. He succeeds Col. Albert A. Sprague, the former president, who died April 6. Dr. Allen had served the medical center commission as vice president previous to being elected to the presidency. He will leave Chicago in August to serve as president of the University of Washington, Seattle. On the commission in addition to Dr. Allen are Mr. David H. Brill, Mr. Albert D. Farwell, treasurer; Mr. Lester W. Norris, St. Charles, Ill.; Mr. Carl Stockholm, and Dr. Walter H. Theobald, assistant professor of laryngology, rhinology and otology at the University of Illinois College of Medicine.

Club for Spastics Formed.—The Young Adult Spastic Club has been organized in Chicago. It aims to provide social and friendly relationships before undertaking a planned program. The advisability of providing a speech therapy program under the direction of a speech pathologist is under consideration. Officers of the club, which is open to any victim of cerebral palsy between the ages of 18 and 35 living in Metropolitan Chicago, are Henry Schmidtke, college student, president; Joyce Halloway, high school senior, vice president; Ruth Tully, employed in a department store, secretary; Richard Koplin, college student, treasurer, and F. Hall Roe, confined at home, corresponding secretary. Serving as members of the board of directors are:

Kenneth Flanagan, director of recreation, National Society for Crippled Children and Adults.
Roy G. Franklin, president, Spastic Paralysis Aid Foundation.
Mrs. Blanch Mulder, service director, Illinois Association for the Crippled.
Alma G. Finnegan, Instructor, Spalding School for handicapped children.
Carolyn Siegal and Marvin Steinberg, both students at Spalding High School.

The club is being sponsored by the Illinois Association for the Crippled and the Spastic Paralysis Aid Foundation, which are meeting refreshment and transportation costs, respectively. The Spastic Paralysis Aid Foundation was formed in June 1945. It is composed of parents who have young spastic children. Mrs. A. E. Schneider is the secretary.

MASSACHUSETTS

Alumni Reunion.—The Alumni Association of Boston University School of Medicine will sponsor a two day continuation course as a special feature of its reunion, May 10-11. A wide range of medical topics will be discussed. Dr. James R. Miller, Hartford, Conn., a Trustee of the American Medical Association, will be the principal speaker at the banquet in the evening at the Hotel Statler.

MISSOURI

State Medical Election.—Dr. Morris B. Simpson, Kansas City, was named president-elect of the Missouri State Medical Association on March 26 at its meeting in Kansas City, and Dr. Howard B. Goodrich, Hannibal, was inducted into the presidency. Other officers include Drs. Daniel L. Sexton, St. Louis; Winifred L. Post, Joplin, and Gaylord T. Bloomer, St. Joseph, vice presidents.

NEW YORK

Physician Honored.—On April 8 "Briggs Night" was observed at Mount Kisco in honor of Dr. Edward F. Briggs, Mount Kisco, who, after thirty-seven years, was retiring to live on Cape Cod. Nearly one thousand persons attended the reception for the physician and his wife.

Cancer Competition for Students.—The New York Cancer Committee, 130 East Sixty-Sixth Street, has instituted a competition in which local students of public, parochial and private high schools may participate. Students may submit exhibits which cover the subject, including posters, miscellaneous material such as booklets, charts and photographs. The competition will close May 9.

New District Health Officer.—Dr. Robert L. Vought, Jamestown, who was recently released from service in the army, has been appointed state district health officer with offices in Rochester, effective April 15. Dr. Vought succeeds Dr. Robert S. Westphal, Batavia, who is becoming deputy health officer of Rochester (THE JOURNAL, March 30, p. 885). Before entering military service in September 1942 Dr. Vought, Jamestown, was district health officer, a position he had held since 1938.

Dissection of Dead Body Authorized.—The Penal Law of the state of New York has been amended so as to authorize dissection of the dead body of a human being and "whenever and so far as the husband, wife or next of kin of the deceased, being charged by law with the duty of burial, may authorize dissection for the sole purpose of ascertaining the cause of death, or may authorize dissection for any other purpose by written instrument which shall specify the purpose and extent of the dissection so authorized."

School Health Advisory Council.—On April 5 the Public School Health Advisory Council was formed to provide health service to Rochester children under a new cooperative program of medical and sociologic authorities. Herman J. Norton, director of health education in public schools, is chairman of the new council, which is composed of public health authorities, board of education officials and members of medical and sociologic departments of the University of Rochester. The Rochester *Times-Union* states that the group will be a joint policy making and advisory group without administrative functions.

New York City

Henry Sherman Honored.—On April 17 the Franklin Institute presented the Franklin medal to Henry C. Sherman, Ph.D., Mitchill professor of chemistry, Columbia University, Morningside Heights, N. Y., "in consideration of his many contributions to the science of nutrition." The medal is bestowed annually on "those workers in physical science or technology, without regard to country, whose efforts have done most to advance a knowledge of physical science or its applications." Dr. Sherman formerly was head of the bureau of human nutrition and home economics of the U. S. Department of Agriculture.

Eye Bank Awards Fellowships.—On April 22 the Eye Bank for Sight Restoration, Inc., announced the awarding of seven scholarships to ophthalmologists from six states for training in the technic of the corneal grafting operation and the establishment of two fellowships to carry on research in blindness resulting from corneal damage. The ophthalmologists who received the scholarships are all trained eye surgeons, certified members of the American Board of Ophthalmology, recognized in their field, and veterans of the past war. They will receive their training at the Corneal Research Laboratory, located at the headquarters of the Eye Bank at 210 East 64th Street. The doctors who receive the awards are:

Dr. John A. Cetner, assistant attending ophthalmologist, Albany Hospital, and instructor in ophthalmology, Albany Medical College, who practices in Albany.
Dr. Fred Sauter, chief refractionist, Brooklyn Eye and Ear Hospital, who practices in Brooklyn.
Dr. Henry L. Birge, who specialized in eye work at the Mayo Clinic, and practices in Hartford, Conn.
Dr. Maurice M. Croll, a captain in the army, chief of the eye, ear, nose and throat department of various station hospitals, who expects to be discharged in June and after taking the course will practice in Detroit.
Dr. Milo H. Fritz, a major in the army, now stationed at the Valley Forge General Hospital, Phoenixville, Pa., who practiced for a year and a half in Ketchikan, Alaska, before joining the army, and who after discharge will become a member of the department of ophthalmology, Dartmouth Medical School.
Dr. Earl H. Merz, a captain in the army, also stationed at the Valley Forge General Hospital, who will practice in Chicago after his discharge.
Dr. Alston Callahan, a former army captain, who has just received the chair of ophthalmology at the University of Alabama Medical College, Birmingham, Ala.

Of the two fellowships, one was established from the funds of the eye bank. It was awarded to the New York University College of Medicine to be used by Dr. Donald T. Hughson of the department of ophthalmology, Bellevue Hospital, under the direction of Dr. Daniel B. Kirby, professor of ophthalmology, for experimental work in corneal grafting. The other, a fellowship of $2,650 given by the Milbank Memorial Fund to the Eye Bank for the study of the vascularization of the cornea, has not yet been awarded. The Eye Bank for Sight Restoration observed its first anniversary May 1.

Dr. Peterson Granted Leave of Absence.—Dr. Jerome Sidney Peterson, assistant professor in the department of preventive medicine and community health, Long Island College of Medicine, Brooklyn, and District Health officer of the Red

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Hook-Gowanus Health Center, New York City Department of Health, has been granted a leave of absence of one year to work with the UNRRA in China, it was announced at the college recently. Dr. Michael Antell, formerly district health officer of the Washington Heights Health Center, has been appointed to serve in Dr. Peterson's place. While with the UNRRA-China mission Dr. Peterson will serve with the commissioned rank of surgeon (R) in the U. S. Public Health Service. His assignment will include the teaching of modern public health methods at the training center established at Chungking for physicians and other public health personnel from all parts of China. Although proceeding directly to Chungking, Dr. Peterson will also travel throughout China as visiting lecturer to teach in the various regional centers which are now being developed. This educational program will emphasize the control of tuberculosis and other communicable diseases.

NORTH CAROLINA

Appointment to Medical Care Commission.—Dr. Clement C. Clay, Atlanta, Ga., recently relieved of active duty in the medical corps of the U. S. Naval Reserve, has been appointed executive secretary of the North Carolina Medical Care Commission, according to the *North Carolina Medical Journal*.

New Professor of Psychiatry.—Dr. Lloyd J. Thompson, formerly associate clinical professor of psychiatry and mental hygiene of the department of psychiatry, Yale University School of Medicine, New Haven, and recently chief consultant in psychiatry for the European theater during the war, has been named professor of psychiatry and director of the department of psychiatry at Bowman Gray School of Medicine, Winston-Salem. Drs. John P. Davis, Winston-Salem; Charles H. Reid Jr., Winston-Salem, and Joseph B. Stevens, Greensboro, have been appointed assistants in medicine at the school. Dr. Thomas T. Mackie, New York, delivered the commencement address at Bowman Gray, March 24.

OHIO

Lecture on Planned Parenthood.—Dr. Walter R. Stokes, Washington, D. C., will address the Maternal Health Association in Cleveland during its eighteenth meeting at the Hotel Carter, May 10, on "New Horizons in Parenthood Planning."

Appointments at Ohio State.—New appointments to the staff of the Ohio State University College of Medicine, Columbus, include those of Dr. Robert M. Zollinger, Boston, as professor of clinical surgery; Dr. Joseph L. Morton, assistant professor of roentgenology, and Dr. Arthur M. Culler, Dayton, associate professor of ophthalmology, in charge of postgraduate education and research.

State Mental Hygiene Association Formed.—On March 6 the Ohio State Mental Hygiene Association was formed with Rev. Dores R. Sharpe, LL.D., Cleveland, as chairman. The object of the association will be to promote mental hygiene in the state as well as to urge the promotion of adequate state facilities for the care of the mentally ill, according to the *Cincinnati Journal of Medicine*.

Fifty Years of Practice.—Dr. Ernest W. Riemenschneider, said to be the first Ford owner in Cleveland, completed fifty years in the practice of medicine recently.——Dr. John C. Henshaw, Warren, coroner of Trumbull County for thirty years, observed his fiftieth year in the practice of medicine, March 22. ——Dr. Emma F. Y. Owsley, London, was guest of honor at a reception, March 17, in honor of her completion of fifty years of practice.

TENNESSEE

Department of Anesthesiology Created at Vanderbilt.—A new department of anesthesiology has been established at Vanderbilt University School of Medicine, Nashville, with Dr. Benjamin H. Robbins, associate professor of pharmacology, in charge.

Personal.—Dr. Everett E. Carrier, Knoxville, has been appointed health officer of Giles County, serving part time in charge of the unit in Lincoln County.——Mr. V. O. Foster has been appointed assistant secretary of the Tennessee State Medical Association, with offices in Nashville.

Dr. Hutcheson to be Retained as Health Commissioner.—Dr. Robert H. Hutcheson, Nashville, will be retained as state commissioner of public health, the Nashville *Banner* reported March 20. Dr. Wilson C. Williams, Nashville, who held the position before he entered army service, was to be offered another post in the department, it was stated.

WEST VIRGINIA

Coordinating Committee for Health Education.—The state health department and the department of education have jointly set up a coordinating committee for health education. The principal objectives are to study recent developments and trends in health education, including school community organization for health education and health welfare, community resources for health education, functional activities for students in health education, and health education materials. Health education workshops are being offered at the summer terms at West Virginia University, Marshall College, West Virginia State College and Bluefield State College. Undergraduate and graduate credit on renewal of teacher's certificates will be given for the two weeks spent in the workshops. Consultants will be specialists from the state health department, the department of education and various colleges. The courses offered are designed to aid school administrators, nurses community leaders and teachers interested in health education to obtain assistance and guidance in developing plans for improving health programs in accordance with modern health education procedures. Mrs. Ruth J. Frantz, publicity director of the bureau of public health education and public relations of the state health department, and Miss Katherine Steinbicker, consultant for the community health service project of the department of education, are co-chairmen of the new committee.

State Medical Meeting.—The seventy-ninth meeting of the West Virginia State Medical Association will be held at the Prichard Hotel, Huntington, May 13-15, under the presidency of Dr. Andrew E. Amick, Charleston, who will speak on "Up to Now." Among the speakers will be:

Dr. Roy G. Spurling, Louisville, Intervertebral Disk Surgery.
Dr. Robert Chobot, New York, Pediatric Allergy.
Dr. Hugh A. Bailey, Charleston, Spontaneous Rupture of the Normal and Abnormal Spleen.
Dr. James M. Hutcheson, Richmond, Va., The Evolution of the Art of Medicine.
Drs. Ray M. Bobbitt and Ivan R. Harwood, Huntington, Some Observations on Renal Neoplasms.
Dr. William M. Sheppe, Wheeling, The Place of Penicillin in the Treatment of Syphilis.
Major Victor H. Kugel, M. C., Ashford General Hospital, Clinical and Electrocardiographic Observations in Cardiac Surgery.
Col. James C. Harding, M. C., Washington, D. C., Medical Care of Veterans.
Dr. Chevalier L. Jackson, Philadelphia, Bronchoscopy as a Diagnostic Aid in Diseases of the Chest.
Dr. Arthur C. Corcoran, Cleveland, The Advances in Treatment of Hypertension and Renal Disease.
Col. James E. Ash, Washington, D. C., Filarial Infections.
Dr. Frank H. Krusen, Rochester, Minn., Physical Rehabilitation in Civilian Practice.
Dr. Thaddeus L. Montgomery, Philadelphia, Abortion, Etiology, Prevention and Treatment.
Dr. John E. Cannaday, Charleston, Hernia.
Dr. Andrew C. Ivy, Chicago, The Physiology of Respiratory Diseases.
Dr. Ralph Adams, Boston, Recent Progress in Thoracic Surgery.
Lieut. Col. Howard A. Swart, M. C., Newton D. Baker General Hospital, Reconstructive Surgery in an Army General Hospital.
Dr. John H. Mitchell and Rev. Fr. Charles Curren, Ph.D., Columbus, Ohio, Nondirective Psychotherapy.

Governor Clarence W. Meadows, Charleston, will address one session on "Whose Responsibility" and Dr. George F. Lull, Secretary and General Manager, American Medical Association, Chicago, another session on "Trends in the Modern Practice of Medicine."

PUERTO RICO

Industrial Hygiene Program.—Mr. J. J. Bloomfield, senior sanitary engineer, industrial hygiene division, U. S. Public Health Service, Washington, D. C., recently left for Puerto Rico to survey the industries and make recommendations for an industrial hygiene program. In connection with the proposed program the Insular Health Department has under scholarship at the University of Michigan a graduate civil engineer who will complete a year's training in June 1946 in the industrial hygiene aspects of sanitary engineering. On completion of his training at Ann Arbor he will spend approximately one or two months with the Bureaus of Industrial Hygiene of the state of Michigan and the Detroit City Health Department before returning to Puerto Rico to serve in the proposed industrial hygiene program.

Bills Signed by the Governor.—The following bills of interest to the medical profession, which form part of the vast public improvements program to be carried out in Puerto Rico during the next six years, were signed by Gov. Rexford G. Tugwell:

Act No. 28, an act to appropriate the sum of $518,000 out of any available funds in the insular treasury not otherwise appropriated so that the commissioner of the interior may construct in harmony with the recommendations of the commissioner of health, new municipal hospitals and type C medical centers, and reconstruct and extend municipal hospitals and urban medical centers now existing in Puerto Rico; to direct the auditor and the treasurer of Puerto Rico to place the sum appro-

priated at the disposal of the commissioner of health and the commissioner of the interior of Puerto Rico, to carry out the dispositions of this act.

Act No. 27, an act to appropriate the sum of $221,000 out of any available funds in the insular treasury not otherwise appropriated for the construction of rural medical health centers in Puerto Rico. These rural medical centers shall pass, on their construction, to the jurisdiction of the Department of Health of Puerto Rico.

Act No. 38, an act to appropriate the sum of $2,100,000 for the construction of hospitals and medical centers in Puerto Rico, to provide the manner in which the funds shall be expended and to accept federal aid for the hospitals facilities construction program.

West Indies Conference.—The West Indies conference called by the Anglo-American Caribbean Commission, an international organization created by the late President Roosevelt during the war, ended March 12 at St. Thomas, Virgin Islands, after adopting a series of resolutions to recommend that the metropolitan governments of Great Britain, the United States, France and the Netherlands adopt measures to develop industrialization, to increase employment and living standards of the people of some fifteen insular possessions of these nations in the Caribbean area. One of the resolutions passed by the group calls for adequate measures to improve the health of the people on which prosperity, to a great extent, depends on the West Indies. Extension of minimum wage rates and enforcement of legal employment standards for both adult and child labor are also major policy recommendations. A conference on industrialization plans will be held no later than February 1947, with the participation of delegates from Canada and those Latin American countries bordering the Caribbean sea. When the sanitary instruction theme on the agenda was discussed at the conference, it was revealed that the Caribbean possessions under the American flag are greatly interested in problems arising from venereal diseases, while the French islands in the Caribbean area, consider as their principal problems those of control of leprosy and smallpox. Representatives of the French Guiana colony announced the existence of a leprosy school exclusively dedicated to instruction of boys affected with this malady, where about 45 students carry out experiments. The school serves a population of about 24,000 inhabitants, for which two hospitals are functioning in addition to several medical centers covering all the country. Dr. Raymond A. Vonderlehr, chief of the U. S. Public Health Service in Puerto Rico, explained the program coordinated by his office and the Health Department of Puerto Rico and medical officials of the Virgin Islands, established during the past two years. This program also functions with the cooperation of the University of Puerto Rico, the department of labor and the planning board of this island. Great progress has been attained in the venereal disease control methods. The School of Tropical Medicine of San Juan serves as the training center for this organization.

GENERAL

Rheumatism Association.—The American Rheumatism Association will hold its 1946 meeting at the Commodore Hotel, New York, May 24-25, instead of in conjunction with the annual session of the American Medical Association as has been customary.

Charles Parsons Honored.—The American Chemical Society at a dinner during its meeting in Atlantic City, April 10, presented Charles L. Parsons, Sc.D., Washington, D. C., with a gold medal for distinguished service to chemistry. Dr. Parsons has been secretary of the American Chemical Society since 1907 and for the last fourteen years has also been business manager.

Ten Year Index on Industrial Hygiene and Toxicology.—The *Journal of Industrial Hygiene and Toxicology* announced that a ten year index is in preparation. It will cover volumes eighteen to twenty-seven, running from 1936 to 1945. The index is priced at $15, but a discount of 10 per cent is allowed on all orders received before publication, November 1. Additional information may be obtained from the *Journal of Industrial Hygiene and Toxicology*, Mount Royal and Guilford avenues, Baltimore 2.

Special Society Elections.—At the thirty-fourth meeting of the American Society for Pharmacology and Experimental Therapeutics in Atlantic City, March 11-15, Dr. Maurice H. Seevers, Ann Arbor, Mich., was elected president. Other officers include Drs. Harry B. Van Dyke, New York, vice president; Harvey B. Haag, Richmond, Va., secretary, and McKeen Cattell, New York, treasurer.——Dr. Paul R. Cannon, Chicago, was elected president of the American Society for Experimental Pathology at its meeting in Atlantic City, March 12, and Dr. Douglas H. Sprunt, Memphis, vice president. Frieda S. Robscheit-Robbins, Ph.D., Rochester, N. Y., is secretary-treasurer.

Medical Director for Glass Company.—Dr. Charles F. Shook, M. C., on terminal leave from service in the army, has been named medical director of the Owens-Illinois Glass Company, a newly created position. Dr. Shook graduated at Creighton University School of Medicine, Omaha, in 1916. During his army career he graduated from the Army Sanitary School, the School of Aviation Medicine and the Army Industrial College. He spent thirteen years in the military service as a flight surgeon and ten years in New York and Washington in procurement planning for medical supplies and equipment. Dr. Shook was deputy chief surgeon to Major. Gen. Paul R. Hawley for the European theater. His most recent assignment was closing hospitals in France, England and Belgium and disposal of excess supplies.

A Hundred Thousand Dollars for Pediatric Study.—The Rockefeller Foundation has given more than $100,000 to the American Academy of Pediatrics to help finance a nationwide study of child health services. Dr. John P. Hubbard, instructor in pediatrics (on leave), Harvard Medical School, Boston, has been appointed executive director of the study under the auspices of a specially appointed committee (THE JOURNAL, February 2, p. 298). The two year survey will seek detailed information on pediatric care from all hospitals, including general, pediatric, maternity and special hospitals such as convalescent homes and tuberculosis sanatoriums. It will also examine existing health services such as child health conferences, school health services, child guidance clinics, immunization programs and public health nursing facilities. Information will be gathered from individual pediatricians, general practitioners and specialists who care for children. Each community will be studied as to the number of physicians it has and essential medical procedures, such as transfusions, administration of intravenous fluids and laboratory facilities, that are available. As part of an extensive evaluation of pediatric education in this country, a study will be made of the sixty-six medical schools to determine the quantity and quality of pediatric training. Dr. Hubbard pointed out that the factual data collected will be used by the American Academy of Pediatrics as a basis on which recommendations or medical care programs may be made.

Research in Psychosomatic Problems.—The American Society for Research in Psychosomatic Problems will hold its 1946 meeting at the Hotel Pennsylvania, New York, May 11-12, under the presidency of Dr. Roy G. Hoskins. Among the speakers will be:

Brigadier Gen. William C. Menninger, M. C., Psychosomatic Medicine; Somatization Reactions.
Dr. Roy R. Grinker, Chicago, Applications of Military Experience to the Theory and Therapy of Acute Psychosomatic States.
Dr. M. Ralph Kaufman, New York, Health as an Expression of Anxiety in a Combat Unit.
Dr. Henry H. Jordan, New York, Lower Back Pains.
Dr. Samuel A. Sandler, Jersey City, N. J., Camptomia, or the Functional Bent Back.
Dr. Jack R. Ewalt, Galveston, Texas, The Phantom Limb.
Roger G. Barker, Ph.D., Stanford University, Calif., The Somatopsychologic Problem.
Dr. Brunhilde Bruch and Irma Hewlett, M.S., Baltimore, Psychologic Aspects of the Medical Management of Diabetes in Children.
Dr. Walter W. Hamburger Jr., Cincinnati, Psychosomatic Medicine in an Army Hospital in India.
Comdr. Meyer A. Zeligs (MC), U.S.N.R., A Psychosomatic Study of Central Angiospastic Retinopathy in Military Personnel.
Dr. Edward Weiss, Philadelphia, Psychosomatic Aspects of Fibrositis.
Drs. John A. P. Millet, Harold A. Abramson and Sadie H. Zaidens, all of New York, A Psychosomatic Evaluation of the Dermatoses.

At the annual dinner the speakers will be Dr. Bertram D. Lewin, New York, on "New Advances in Psychosomatic Investigative Techniques," and Dr. Carl A. L. Binger, New York, on "The Epic of Belawolff or The Slaying of the Psycho-Some."

Fellowships Available by Medical Research Fund.—The Life Insurance Medical Research Fund announces postgraduate and student research fellowships. In the first classification the fellowships are open to residents of the United States and Canada who possess an M.D. or Ph.D. degree or the equivalent. Holders are expected to devote full time to research. For the present, preference will be given to those who wish to work on fundamental problems broadly related to cardiovascular function and disease. The annual stipend varies, but as a rule is between $2,500 and $3,000. Larger amounts may be granted in individual instances for special reasons. Fellowships are granted for one year but may be renewed for one or two years. They may begin at any time. Applications for grants to be held for the academic year 1946-1947 must be received before August 1. Such applications received before May 15 will be acted on in June; those received later will be acted on in September. For subsequent academic years, applications must be received before January 1; action will be taken in February. Student research fellowships are open to residents of the United States and Canada who have completed at least one year of medical school but who are not

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experienced investigators. Holders are expected to devote at least three fourths of their time to research under the direction of an experienced investigator. For the present, preference will be given to those who wish to work on fundamental problems broadly related to cardiovascular function and disease. Students will necessarily spend an extra year in obtaining the M.D. degree. The annual stipend varies but as a rule is between $1,500 and $2,000. Fellowships are granted for one year. They may begin at any time. Applications for grants must be made by a sponsor who is normally the investigator under whom the applicant will work. Applications for grants to be held in the academic year 1946-1947 must be received before August 1. Such applications received before May 15 will be acted on in June; those received later will be acted on in September. For subsequent academic years, applications must be received before April 15; action will be taken in June. Further information may be obtained from Dr. Francis R. Dieuaide, scientific director, Life Insurance Medical Research Fund, 333 Cedar Street, New Haven 11, Conn.

College of Physicians.—The twenty-seventh session of the American College of Physicians will be held at the Convention Hall, Philadelphia, May 13-17, under the presidency of Dr. Ernest E. Irons, Chicago. Among the speakers will be:

Drs. George D. Gammon and John H. Stokes, Philadelphia, Penicillin in Neurosyphilis.
Dr. Roger I. Lee, Boston, Geriatrics.
Dr. Edward Weiss, Philadelphia, Psychogenic Rheumatism.
Dr. Lester R. Dragstedt, Chicago, Section of the Vagus Nerves to the Stomach in the Treatment of Peptic Ulcer.
Drs. Henry J. Tumen, James F. Monaghan and Emil Jobb, all of Philadelphia, Hepatic Cirrhosis as a Complication of Ulcerative Colitis.
Dr. Edwin B. Astwood, Boston, Use of Thiouracil in Hyperthyroidism.
Dr. Arthur L. Watkins, Boston, Prescription of Physical Medicine by the Internist.
Dr. Francis G. Blake, New Haven, Conn., Tsutsugamushi Disease (Scrub Typhus): A Review of Recent Observations.
Drs. Ramon M. Suarez, San Juan, P. R., Tom D. Spies, Cincinnati and Birmingham, Ala., and Ramon M. Suarez Jr., San Juan, P. R., The Use of Folic Acid in Sprue.
Drs. Thomas Francis Jr. and Jonas E. Salk, both of Ann Arbor, Immunization Against Influenza.

Morning lectures will be given on blood banks and storage of blood, the management of renal dysfunction, nitrogen metabolism in chronic disease, liver function in hepatitis, schistosomiasis, diverticula of the gastrointestinal tract, coronary artery disease in 18-39 year age group and peripheral vascular disease. There will be panel discussions on antibiotic therapy, treatment of thyroid disease, treatment of liver disease, tropical medicine in general practice, medical viewpoints of cardiovascular surgery, treatment of syphilis, electrocardiography, treatment of peptic ulcer, treatment of hypertension, diabetes, allergy, peripheral vascular disease, arthritis, hematology, blood transfusion and blood substitutes, and vitamins. The program also will include clinics at the various local hospitals and a symposium on plasma fractions.

Society of American Bacteriologists.—The forty-sixth general meeting of the Society of American Bacteriologists will be held at the Book-Cadillac Hotel, Detroit, May 21-24, under the presidency of Dr. James Craigie, Toronto, Canada, and under the sponsorship of the Michigan branch of the society. The first session will be devoted to the teaching of bacteriology at the graduate and professional levels with the following speakers:

William Burrows, Ph.D., Chicago, Basic Training in Bacteriology.
Dr. Walter J. Nungester, Ann Arbor, Bacteriologic Training for Professional Students.
J. Howard Meuller, Ph.D., Boston, Graduate Training in Bacteriology.
Dr. Francis B. Gordon, Chicago, The Teaching of Viral and Rickettsial Diseases.
Dr. Donald S. Martin, Durham, N. C., The Teaching of Mycology as a Part of Medical Bacteriology.
Harry E. Morton, Sc.D., Philadelphia, Enlivening and Clarifying the Instruction in Bacteriology by the Use of Audiovisual Aids.

Among the numerous speakers on the general program are:

Guy P. Youmans, Ph.D., Chicago, and William H. Feldman, D.V.M., Rochester, Minn., The Sensitivity of Tubercle Bacilli in Vitro to Streptomycin.
Albert Kelner, Philadelphia, A Survey of Antibiotic Production by Representative Aspergilli, Penicillia, and Other Fungi from a Culture Collection.
Miriam O. Lipman, A.M., James A. Coss, M.S., and Ralph H. Boots, all of New York, Changes in the Bacterial Flora of the Throat and Intestinal Tract During Prolonged Oral Administration of Penicillin.
Robert M. Pike, Ph.D., Dallas, Mucoid Polysaccharide Production, Encapsulation and Colony Morphology of Carrier Strains of Group A Streptococci.
John H. Hanks, Ph.D., Culion, Philippines, The Fate of Leprosy Bacilli in Tissues Cultivated from Leprous Lesions.
Dr. Charles A. Evans, Minneapolis, Intraocular Infection with the Viruses of Ornithosis and Feline Enteritis.
Dr. Charles F. Pait Jr., John F. Kessel, Ph.D., and Philip Grossman, all of Los Angeles, The Neutralization of the Mouse Adapted Poliomyelitis Virus by the Serums of Children.
Isabel M. Morgan, Ph.D., Baltimore, Allergic Encephalomyelitis in Monkeys in Response to Injection of Normal Monkey Cord.
Elizabeth W. St. John, S.B., and Dr. Francis B. Gordon, both of Chicago, Studies on Antigenic Relationships Within the Psittacosis Lymphagranuloma Group of Viruses.
MacDonald Fulton, Ph.D., and Martha L. Chilton, both of Galveston, Texas, The Classification of Paracolon Bacilli Isolated from Man.
Drs. Sara E. Branham and Karl Habel, both of Bethesda, Md., Preparation and Evaluation of an Irradiated Toxoid from the Toxin of Shigella Dysenteriae.
Albert Milzer, Ph.D., and Dr. Sidney O. Levinson, both of Chicago, Production of Potent Inactivated Vaccines with Ultraviolet Irradiation: V. Active and Passive Immunization with Lymphocytic Choriomeningitis Vaccine.
Dr. Paul R. Cannon, Chicago, Immunologic Aspects of Protein Metabolism.
Joseph Hejna, B.S., and Dr. Leslie R. Hedrick, Ph.D., both of Chicago, Effect of Growth of Micro-Organisms on Formation of Peroxide-Free Fatty Acids, Aldehydes and Ketones from Oils with Different Iodine Numbers.
Reuben L. Kahn, Sc.D., Ann Arbor, Studies on Biologically Universal Serum Reactions (Nonsyphilitic) with Liquid Antigens.
Selman A. Waksman, Ph.D., Walton B. Geiger, Ph.D., and S. R. Green, all of New Brunswick, N. J., The Inactivation of Streptomycin and its Practical Applications.
Alexander Hollaender, Ph.D., Bethesda, Md., The Use of Ultraviolet Radiation in Air Disinfection.

Support for National Science Foundation Bill.—On April 16 the Committee Supporting the Bush Report sent an appeal to Congress to enact S. 1850, the National Science Foundation Bill, known as the Kilgore-Magnuson bill. The appeal is on behalf of the 5,000 scientists and others who signed or endorsed a letter sent to the President dated Nov. 24, 1945 and reads as follows:

For the reasons stated in the Bush Report and in the Report on Science Legislation of the Committee on Military Affairs, we are in favor of Federal support for scientific research and education. We are in favor of a National Science Foundation. We are satisfied that, given appointments by the President to the National Science Board solely on the basis of demonstrated capacity and fitness, the Foundation described in S. 1850 will promote and protect the interests of science and will thus serve the public welfare.

While S. 1850 is a compromise, it is a compromise on which most scientists have agreed. Most of the principles for which this Committee has consistently stood have been accepted. Thus there is provision for a strong National Science Board. Though the Administrator will be appointed by the President, the President must consult with and receive the recommendations of the National Science Board concerning the appointment. And the Administrator must consult and advise with the Board on all matters of major policy, program, or budget. The Board has the power to make recommendations to the President and to the Congress independently of the Administrator. The advice and approval of the Board are required for appointment to the Divisional Scientific Committees, the chairmen of which will serve as members of the Board. Except in the case of National Defense, there is no provision for *ex officio* appointments either to the Board or to the Divisional Committees. The Foundation will be endowed with powers sufficient to initiate and carry out an effective program in aid of scientific research and education.

In endorsing S. 1850 and appealing for its prompt enactment we recognize that many scientists doubt the wisdom of (a) the inclusion of the social sciences in *this* legislation, (b) the provisions affecting the Government's patent policy, and (c) the arrangement for mandatory geographical distribution of funds to state-supported and land grant colleges. While many would be better satisfied if these provisions were dropped from the legislation, we should regard protracted delay or failure to enact this legislation would be far more prejudicial to the public interest than the inclusion of the provisions objected to.

We believe that the creation of a National Science Foundation to support fundamental scientific research and the education of scientists is of the utmost importance for the health, security and welfare of the nation. Moved by this conviction and recognizing the public responsibility of men of science in these matters, we have, to the full extent of our ability, endeavored to aid the Congress in the formulation of workable legislation. Believing the matter to be of great urgency, we recently joined with other non-partisan groups in an appeal to the Chairman and members of the Senate Committee on Military Affairs to report a bill on which the majority of scientists could agree. S. 1850 is the result. We endorse this bill and appeal now to the Congress as a whole to create a National Science Foundation by the enactment of S. 1850 before the end of the present session.

Members of the committee include:

Roger Adams, Ph.D., Urbana, Ill.
William P. Anslow Jr., Ph.D., New York
Boris A. Bakhmeteff, D.E., New York
George W. Beadle, Ph.D., Stanford University, Calif.
Dr. Francis G. Blake, New Haven, Conn.
Isaiah Bowman, L.L.D., Baltimore
Detlev W. Bronk, Ph.D., Philadelphia
Dr. William B. Castle, Boston
Alfred Chanutin, Ph.D., Charlottesville
Walter C. Coffey, L.L.D., Minneapolis
Robert E. Doherty, L.L.D., Pittsburgh
Edward A. Doisy, Ph.D., St. Louis
Lee A. DuBridge, Ph.D., Rochester, N. Y.
F. Malcolm Farmer, M.E., New York
Dr. Herbert S. Gasser, New York
Dr. Ernest Goodpasture, Nashville, Tenn.
Farnham P. Griffiths, San Francisco
Robert F. Griggs, Ph.D., Washington, D. C.
Caryl P. Haskins, Ph.D., New York
Dr. Andrew C. Ivy, Chicago
Chauncey D. Leake, Ph.D., Galveston
Dr. Ewen M. MacEwen, Iowa City
Charles E. MacQuigg, E.M., Columbus, Ohio
Dr. Hyrum L. Marshall, Salt Lake City
Carl S. Marvel, Ph.D., Urbana, Ill.
John S. Nicholas, Ph.D., New Haven
Dr. Alton Ochsner, New Orleans
J. Hugh O'Donnell Ph.D., Notre Dame, Ind.
Dr. Walter W. Palmer, New York
Linus C. Pauling, Ph.D., Pasadena, Calif.
Alfred N. Richards, Sc.D., Philadelphia
Dr. Homer W. Smith, Rochester, N. Y.
Dr. James J. Waring, Denver
Bethuel M. Webster, New York
Dr. Lewis H. Weed, Baltimore

Deaths

Waid Edwin Carson ✦ Pittsburgh; Johns Hopkins University School of Medicine, Baltimore, 1907; professor of ophthalmology at the University of Pittsburgh School of Medicine; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology, Pittsburgh Academy of Medicine, the Pittsburgh Ophthalmological Society and the Association for Research in Ophthalmology; fellow of the American College of Surgeons; served in the U. S. Naval Reserve during World War I; on the staffs of Western Pennsylvania Hospital, Eye and Ear Hospital, Magee Hospital and the Presbyterian Hospital, where he died April 10, aged 69, of heart disease.

Gerhard A. Bading, Milwaukee; Rush Medical College, Chicago, 1896; born in 1870; formerly on the faculties of the old Milwaukee Medical College and the Wisconsin College of Physicians and Surgeons and regent at the Marquette University; served during World War I; health commissioner from 1906 to 1910; at one time mayor; for many years United States minister to Ecuador; formerly attending surgeon at the Johnston Emergency Hospital and consulting surgeon at the Milwaukee County Hospital; served as resident physician at the Milwaukee Hospital, where he died April 11, aged 75.

John Howard Acheson, New York; University of Buffalo School of Medicine, 1900; member of the American Medical Association; served during World War I; formerly affiliated with the Manhattan Eye and Ear Hospital and the New York Polyclinic Medical School and Hospital; died at his home in New Rochelle January 18, aged 70, of pulmonary embolism.

Rocco Marcus Antonelli, Youngstown, Ohio; Eclectic Medical College, Cincinnati, 1919; died in the Southside unit of the Youngstown Hospital January 2, aged 57, of cerebral embolism and cardiac fibrillation.

Russell S. Beam, Lumberton, N. C.; Jefferson Medical College of Philadelphia, 1912; born in 1887; member of the American Medical Association; fellow of the American College of Surgeons; specialist certified by the American Board of Otolaryngology; served in France during World War I; chief of the eye, ear, nose and throat department, Thompson Memorial Hospital; served on boards of several state institutions; president of the National Bank of Lumberton; died January 9, aged 58, of coronary thrombosis.

Charles Howard Bellamy, Dallas, Texas; Physio-Medical College of Indiana, Indianapolis, 1897; member of the American Medical Association; on the staffs of the Baylor University Hospital and St. Paul's Hospital, where he died January 9, aged 72, of coronary occlusion.

Martin W. Bisson ✦ Charleston, Ill.; Chicago Homeopathic Medical College, 1902; past president of the Coles-Cumberland Counties Medical Society; on the staff of the M. A. Montgomery Memorial Sanitarium; killed January 1, aged 68, when the automobile in which he was driving was struck by a train.

Barton Brewer Bridge, Albert City, Iowa; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1900; past president of the Buena Vista County Medical Society; life member of the Iowa State Medical Society; served as local town health officer and member of the school board; died in Storm Lake December 23, aged 74, of cerebral hemorrhage following an automobile accident.

John I. Brockbank, Du Bois, Pa.; Baltimore University School of Medicine, 1886; member of the American Medical Association; twice elected county coroner; for eighteen years health officer of Du Bois and member of the school board; charter member of the city public library commission; on the staff of the Du Bois Hospital, where he died January 9, aged 87, of anemia and arteriosclerosis.

Elmer E. Burns, Kirby, Ohio; Columbus Medical College, 1890; served as mayor of Kirby and member of the board of education; died in the McKittrick Hospital, Kenton, January 6, aged 80, of hernia.

Oscar Piece Chapman, Port Royal, Ky.; Hospital College of Medicine, Louisville, 1902; member of the American Medical Association; president of the Henry County Medical Society; served during World War I; died in the U. S. Marine Hospital, Louisville, January 8, aged 71, of cerebral hemorrhage.

Josiah Coborn ✦ Hopewell Junction, N. Y.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1907; served as health officer of the towns of East Fishkill and Beekman; on the staff of the Vassar Brothers Hospital, where he died January 7, aged 68, of cerebral thrombosis.

James Bronson Conant, Amsterdam, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1896; member of the American Medical Association; fellow of the American College of Surgeons; served as county coroner; past president of the staff of the Amsterdam City Hospital; on the staff of St. Mary's Hospital; died January 5, aged 75, of cerebral hemorrhage.

Isaac Fory Crosby, Pasadena, Calif.; College of Physicians and Surgeons of Chicago, 1889; member of the American Medical Association; past president of the Southwestern Iowa Medical Association; member of the American Association of Railroad Surgeons; for many years surgeon for the Rock Island Railroad; died December 19, aged 81, of bronchopneumonia, cerebral thrombosis and Parkinson's disease.

Howard Irving Davenport, Auburn, N. Y.; Johns Hopkins University School of Medicine, Baltimore, 1905; member of the American Medical Association; past president of the Cayuga County Medical Society; associated with the Cayuga County Laboratory; on the staffs of the Mercy Hospital and the Auburn City Hospital, where he died January 9, aged 67, of coronary occlusion.

Louis Belfair Derdiger, Minneapolis; Maryland Medical College, Baltimore, 1909; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1910; formerly affiliated with the Veterans Administration Facility; died January 4, aged 58, of myocardial and renal insufficiency.

Gustave Adolf Everson ✦ Rolfe, Iowa; State University of Iowa College of Medicine, Iowa City, 1910; secretary of the Pocahontas County Medical Society; died January 6, aged 61, of coronary occlusion.

James Henry Flynn, Troy, N. Y.; Albany Medical College, 1899; member of the American Medical Association; for many years health commissioner; past president of the Rensselaer County Medical Society; served as president and vice president of the New York State Health Officers' Association; on the staffs of the Leonard, Troy and Samaritan hospitals; died January 9, aged 72, of coronary thrombosis.

Louis Bernard Goldberger, New York; Long Island College Hospital, Brooklyn, 1910; member of the American Medical Association; on the staffs of the Community and Lincoln hospitals; died December 2, aged 56, of coronary disease.

Ernest Flint Green, Seal Beach, Calif.; Gross Medical College, Denver, 1895; died December 31, aged 75, of cerebral hemorrhage and hypertension.

Alys Abigail Bixby Griff, Portland, Ore.; University of Orgeon Medical School, Portland, 1902; died January 2, aged 65, of cardiorenal disease.

Henry Young Harper, Oakhill, Ala.; University of Louisville School of Medicine, 1933; began active duty as a first lieutenant in the medical corps, Army of the United States, in August 1942; relieved from active duty in January 1944; died in Birmingham January 13, aged 37.

Ernest Samuel Heilman ✦ Ida Grove, Iowa; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; died January 8, aged 66, of cerebral hemorrhage.

John Carroll Johnson, Hamilton, Ala.; Hospital College of Medicine, Louisville, 1892; member of the American Medical Association; served as county health officer; died in Louisville, Ky., January 3, aged 84, of chronic interstitial nephritis.

Lewis C. Jones, Madison Station, Miss.; Louisville (Ky.) Medical College, 1886; died December 29, aged 84, of arthritis.

Grant M. Kistler, Lansford, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1889; last surviving member of the original board of directors of the Citizens National Bank, serving as its president for many years; died in the Coaldale State Hospital, Coaldale, January 3, aged 80, of strangulated inguinal hernia.

Richard Maury Leake ✦ Laramie, Wyo.; Memphis (Tenn.) Hospital Medical College, 1901; served as health officer of Albany County; died in Denver, January 7, aged 67, of coronary occlusion.

Clarence Long, Hurtsboro, Ala.; Chattanooga Medical College, 1901; member of the American Medical Association; died in the City Hospital, Columbus, Ga., December 13, aged 70, of heart disease.

Joseph Francis Long, Brooklyn; Long Island College Hospital, Brooklyn, 1895; served overseas during World War I and on the staffs of the Kings County and Brooklyn hospitals; died January 4, aged 71, of coronary embolism.

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Francis McConaughy, Somerville, N. J.; New York Homeopathic Medical College and Hospital, New York, 1890; member of the American Medical Association; past president of the Somerset County Medical Society; on the staff of the Somerset Hospital; died in Ridgewood January 13, aged 82, of chronic myocarditis.

Carl Ray McFarland, Long Beach, Calif.; Ensworth Medical College, St. Joseph, Mo., 1905; died in Pomona December 10, aged 65, of lateral sclerosis.

Edwin Bruce McKay, Detroit; Detroit College of Medicine, 1896; on the auxiliary staff of the Grace Hospital, where he died January 17, aged 75, of hypertensive cardiovascular disease.

Gerald Stone McShane ✦ Spring Valley, Ill.; Loyola University School of Medicine, Chicago, 1921; served during World War I; at one time secretary treasurer of the Bureau County Medical Society; formerly chief medical director at the Green River Ordnance Plant, Dixon; formerly on the staff of St. Margaret's Hospital; died January 11, aged 52, of coronary occlusion.

Virgil Elwood Massey ✦ Huntingdon, Tenn.; Vanderbilt University School of Medicine, Nashville, 1914; past president of the Tri-County Medical Association and the West Tennessee Medical and Surgical Association; alderman of the town of Huntingdon; served overseas during World War I; formerly member of the school board; at one time affiliated with the Knoxville (Tenn.) General Hospital; past president of the Lions Club; died January 13, aged 54, of coronary thrombosis.

Michael Bernard Milan, Providence, R. I.; Bellevue Hospital Medical College, New York, 1892; member of the American Medical Association; died January 20, aged 83, of arteriosclerosis.

Warren Jacob Miller, Miami, Fla.; Jefferson Medical College of Philadelphia, 1901; at one time a medical missionary; died in the Miami Retreat January 16, aged 75, of arteriosclerosis.

Andrew J. Montgomery, Resaca, Ga.; Atlanta Medical College, 1897; died January 3, aged 73, of heart disease.

Felix Moraux, Green Bay, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1898; died in St. Mary's Hospital January 29, aged 71, of coronary occlusion.

Leroy Morris Jr., Trenton, N. J.; Howard University College of Medicine, Washington, D. C., 1925; served during World War I; died in the Jersey City Medical Center January 8, aged 49, of carcinoma of the stomach.

Stanley Clifford Mulholland, Santa Barbara, Calif.; University of Minnesota Medical School, Minneapolis, 1923; member of the American Medical Association; on the staffs of St. Francis Hospital and the Cottage Hospital, where he died March 4, aged 52, of malignant hypertension.

Julius Noerdlinger, Chicago; Julius-Maximilians-Universität Medizinische Fakultät, Würzburg, Bavaria, Germany, 1915; interned at the Michael Reese Hospital; died suddenly, January 20, aged 56, of coronary occlusion.

William Frederick Nolting, Brooklyn; Long Island College Hospital, Brooklyn, 1895; member of the American Medical Association; served on the local draft board during World War I; died January 25, aged 77, of arteriosclerosis.

William Scott Payne, Des Moines; Rush Medical College, Chicago, 1889; died recently, aged 83, of prostatic hypertrophy.

Alfred Potter ✦ Brooklyn; Long Island College Hospital, Brooklyn, 1902; emeritus professor of dermatology at his alma mater; specialist certified by the American Board of Dermatology and Syphilology; consulting dermatologist, Mary Immaculate Hospital, Jamacia, Long Island College, Kings County, Norwegian, Swedish, Lutheran, Brooklyn Eye and Ear, St. Giles and Brooklyn State hospitals; found dead December 27, aged 65.

Richard Otis Preston, Topeka, Kan.; Kansas Medical College, Medical Department of Washburn College, 1911; served during World War I; died December 30, aged 60, of coronary thrombosis.

Alva C. Puckett, Fairfield, Ill.; Physio-Medical College, Cincinnati, 1880; died January 29, aged 93, of influenza.

Samuel Elmer Ralston, Harlingen, Texas; Jefferson Medical College of Philadelphia, 1889; died January 2, aged 83, of left ventricular failure.

Samuel Thompson Redgrave Revell ✦ Louisville, Ga.; University of Maryland School of Medicine, Baltimore, 1905; past president of the Jefferson County Medical Society and the Sixth District Medical Society; past vice president of the Medical Association of Georgia; served during World War I; died January 13, aged 65, of carcinomatosis.

Daniel W. Relihan, Smith Center, Kan.; Rush Medical College, Chicago, 1896; honorary member of the Kansas Medical Society; member of the American Medical Association; one of the original organizers, charter member and past president of the Smith County Medical Society; formerly county health officer; served as United States examining surgeon, Bureau of Pensions; died January 6, aged 91, of adenocarcinoma of the liver.

Eli Vestal Rice, Polo, Ill.; Kentucky School of Medicine, Louisville, 1894; Hospital College of Medicine, Louisville, 1896; died in Sterling December 23, aged 86, of arteriosclerosis.

Edwin Rinear, Traverse City, Mich.; Medical College of Ohio, Cincinnati, 1890; member of the American Medical Association; in March 1922 joined the staff of the Traverse City State Hospital, where he served continuously until his retirement on Sept. 30, 1943, at which time he held the position of senior physician; died in Mount Dora, Fla., January 14, aged 79, of arteriosclerotic heart disease.

Albert W. Rye, Russellville, Ark.; Memphis (Tenn.) Hospital Medical College, 1900; died in St. Mary's Hospital in December, aged 70, of pneumonia.

Orris William Saunders ✦ Camden, N. J.; Jefferson Medical College of Philadelphia, 1898; past president of the Camden County Medical Association; served as city councilman, coroner, county physician and member of the board of managers of the Camden County Tuberculosis Hospital, Grenloch; died January 13 in the Cooper Hospital, aged 69, of virus pneumonia.

John Curtis Sayers ✦ Reynoldsville, Pa.; Medical Department of the Western University of Pennsylvania, Pittsburgh, 1897; president of the school board and board of health; health officer; formerly county coroner; on the staff of the Maple Avenue Hospital, Du Bois, and the Adrian Hospital, Punxsutawney; died December 31, aged 73, of coronary occlusion.

Arthur William Shaleen ✦ Hallock, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1902; served during World War I; affiliated with the Kittson War Veterans' Memorial Hospital; died January 6, aged 67, of coronary thrombosis, diabetes mellitus and hypertensive heart disease.

Martin Edward Staudenmayer, Leachville, Ark.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1914; died December 20, aged 60, of heart disease.

George Reimensnyder Teitsworth ✦ Kingston, Pa.; Temple University School of Medicine, Philadelphia, 1932; interned at the Wilkes-Barre General Hospital in Wilkes-Barre; served a residency at the Hazleton State Hospital in Hazleton; died December 31, aged 39, of acute cardiac failure.

George Hoy Tibbins, Beech Creek, Pa.; Jefferson Medical College of Philadelphia, 1890; member of the American Medical Association; served during World War I; died December 13, aged 77, of cerebral hemorrhage.

Eugene Wallace, Norwich, Kan.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; member of the American Medical Association; owner and medical director of the Norwich Hospital; died January 10, aged 66, of coronary thrombosis.

Marcus Aurelius Weems ✦ East Columbia, Texas; University of Pennsylvania Department of Medicine, Philadelphia, 1890; died January 3, aged 78, of carcinoma of the prostate.

John Albert Welborn, Glendale, Calif.; California Medical College, San Francisco, 1897; died in a local hospital December 27, aged 77.

Gottlieb Werley ✦ El Paso, Texas; Columbian University Medical Department, Washington, D. C., 1894; died December 27, aged 80, of generalized arteriosclerosis.

Thomas Dallas White, Orrstown, Pa.; Medico-Chirurgical College of Philadelphia, 1893; member of the American Medical Association; died December 16, aged 73, of coronary occlusion.

Arthur Raymond Wilson, Ingomar, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1892; died December 14, aged 81, of bronchopneumonia and arteriosclerosis.

John Samuel Wilson ✦ Monticello, Ark.; University of Arkansas School of Medicine, Little Rock, 1913; specialist certified by the American Board of Radiology, Inc.; past president and secretary of the Drew County Medical Society; member of the Radiological Society of North America, Inc., and the American College of Radiology; secretary of the Arkansas Radiological Society; served in France during World War I; on the staff of the Mack Wilson Hospital, where he died January 7, aged 66, of cerebral hemorrhage.

Charles William Yeck, Pawnee, Ill.; University of Louisville Medical Department, 1891; died in a hospital at Peoria January 15, aged 78, of cardiac decompensation.

DIED WHILE IN MILITARY SERVICE

Morris Horn ✠ New York; Fordham University School of Medicine, New York, 1921; interned at the Jersey City Hospital; served on the staffs of Beth David Hospital and the Hospital for Joint Diseases and physician to the Columbia Grammar School for Boys; began active duty as a captain in the medical corps, Army of the United States, on July 14, 1943; died in France, Dec. 9, 1945, aged 45, of coronary thrombosis.

Charles Frederic LeComte ✠ Passed Assistant Surgeon, Lieutenant, U. S. Navy, Madison, Wis.; University of Oregon Medical School, Portland, 1932; U. S. Naval Medical School, 1938; entered the U. S. Navy as a lieutenant (jg) on Aug. 17, 1936; promoted to lieutenant; interned at the Multnomah Hospital in Portland, Ore.; died in Fukuoka Prison Camp in Japan Feb. 3, 1945, aged 37, of acute enteritis.

George Maurice Lichtenstein, Philadelphia; Temple University School of Medicine, Philadelphia, 1936; interned at St. Joseph's Hospital; began active duty as a first lieutenant in the medical corps, Army of the United States, on Dec. 5, 1940; promoted to captain; died Dec. 20, 1945, aged 32, of sarcoma.

William George McKay ✠ Colonel, M. C., U. S. Army, Washington, D. C.; Rush Medical College, Chicago, 1910; U. S. Army Medical School, 1922; served during World War I; entered the medical corps of the regular army in 1920; died in the Brooke General Hospital, Fort Sam Houston, Texas, July 15, 1943, aged 62, of carcinoma of the bladder.

William Henry Mathews, Rochester, N. Y.; Harvard Medical School, Boston, 1936; interned at the Strong Memorial and Rochester Municipal Hospitals, where he served a residency; began active duty as a lieutenant (jg) in the medical corps of the U. S. Naval Reserve on Feb. 7, 1942; promoted to lieutenant and lieutenant commander; died on the U. S. S. *Nashville* Dec. 13, 1944, aged 33, following traumatic amputation of the lower extremities.

Walter Mauthe, Whitefish Bay, Wis.; Marquette University School of Medicine, Milwaukee, 1932; interned at St. Mary's Hospital in Milwaukee; began active duty as a lieutenant in the medical corps of the U. S. Naval Reserve on Oct. 12, 1942; stationed for twenty-five months in the New Hebrides Islands as medical officer of a Seabee detachment; promoted to lieutenant commander; died Nov. 19, 1945, aged 37, of coronary thrombosis.

Thomas White Meriwether, Doddsville, Miss.; University of Tennessee College of Medicine, Memphis, 1934; member of the American Medical Association; began active duty as a first lieutenant in the medical corps, Army of the United States, on March 9, 1944; promoted to captain; went overseas in January 1945; served in three battles on Okinawa; died in Seoul, Korea, Nov. 24, 1945, aged 32, of spinal meningitis.

Louis Michaels ✠ Brooklyn; Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Prussia, Germany, 1935; served as assistant physician at the Unity Hospital; began active duty as a first lieutenant in the medical corps, Army of the United States, in October 1942; promoted to captain; served in the medical gas division and lectured in England on the treatment of gas casualties; went to France shortly after the invasion and headed a surgical team in the Bastogne Bulge Battle; won the Bronze Star; died at Camp Upton, L. I., Oct. 11, 1945, aged 37.

Charles Marion Musso Jr., Washington, D. C.; Georgetown University School of Medicine, Washington, D. C., 1935; served an internship and residency at the Georgetown University Hospital; diplomate of the National Board of Medical Examiners; began active duty as a captain in the medical corps, Army of the United States (National Guard), on Feb. 3, 1941; promoted to major; died in Mutzig, France, Dec. 24, 1944, aged 37.

Francis Harold Needle, Pontiac, Mich.; Wayne University College of Medicine, Detroit, 1939; interned at the Highland Park (Mich.) General Hospital; served a residency at the Pontiac General Hospital; member of the American Medical Association; lieutenant, medical corps, U. S. Naval Reserve; stationed in the Aleutian Islands for eighteen months; sent to Texas for eight months before heading for the South Pacific in October 1944; killed in the Pacific area July 27, 1945, aged 36, in a plane crash while serving as a flight surgeon with a rescue squadron.

Vincent Carol Olshefski, Mount Carmel, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1939; member of the American Medical Association; interned at the Pottsville Hospital in Pottsville; began active duty as a lieutenant (jg) in the medical corps, U. S. Naval Reserve, on Aug. 12, 1942; promoted to lieutenant; served five months in the Pacific theater of war; later navy physician for the V-12 unit at Bloomsburg State Teachers College; returned for reassignment in Norfolk, Va.; where he died in the U. S. Naval Hospital, Sept. 2, 1945, aged 31, of acute myocarditis.

Joseph David Picciotti, Rochester, N. Y.; Harvard Medical School, Boston, 1928; member of the American Medical Association; interned at St. Mary's Hospital in Rochester; began active duty as a lieutenant commander in the medical corps of the U. S. Naval Reserve on Jan. 18, 1943; died in Cavite, P. I., Aug. 29, 1945, aged 42.

William J. Long Porcher ✠ Lieutenant Colonel, M. C., U. S. Army, New York; University of Minnesota Medical School, Minneapolis, 1933; U. S. Army Medical School in 1937; interned at the City of Detroit Receiving Hospital in Detroit and University Hospital in Minneapolis; served a residency at the Northern Pacific Beneficial Association Hospital in St. Paul; entered the medical corps of the regular army in 1936; died in England, Nov. 24, 1944, aged 35, of coronary occlusion.

Richard Martin Riley, Albuquerque, N. M.; Northwestern University Medical School, Chicago, 1935; member of the American Medical Association; interned at the Mercy Hospital in Chicago; began active duty as a captain in the medical corps, Army of the United States, National Guard, on Jan. 3, 1941; promoted to major; died in the Southwest Pacific area July 9, 1943, aged 34, of amebic dysentery.

Jack Percy Scott ✠ Lieutenant Colonel, M. C., U. S. Army, Galveston, Texas; University of Texas School of Medicine, Galveston, 1935; entered the medical corps of the U. S. Army as a first lieutenant in May 1938; promoted through the various grades to that of lieutenant colonel; died near Ledo, India, March 4, 1945, aged 35, in an airplane crash.

Richard Edward Shea, Willimantic, Conn.; Yale University School of Medicine, New Haven, 1930; born in Willimantic Sept. 28, 1906; member of the American Medical Association; interned at the Grace Hospital in New Haven and a residency at the Hartford Hospital in Hartford; began active duty as a first lieutenant in the medical corps, Army of the United States, on June 4, 1943; served twenty-two months with the Army Air Force in India and Okinawa, where he was successively promoted to captain and major; recently returned to the United States; formerly affiliated with the Windham Community Memorial Hospital where he died Nov. 6, 1945, aged 39.

Irving Isadore Shure, Bethel, N. C.; Medical College of Virginia, Richmond, 1933; interned at the Trinity Hospital in Brooklyn; served a residency at the Beth Israel Hospital in Boston; major, medical corps, Army of the United States; died near Port Patrick, Scotland, July 27, 1944, aged 35, in an airplane crash.

Barnett Solovioff, New York; Marquette University School of Medicine, Milwaukee, 1942; diplomate of the National Board of Medical Examiners; interned at the Jewish Hospital in Brooklyn; began active duty as a first lieutenant in the medical corps, Army of the United States, on Feb. 17, 1943; promoted to captain; died in Oneida, Tenn., May 6, 1944, aged 28, in an aircraft accident.

Clarence Johnson Strand, Amherst, Neb.; University of Nebraska College of Medicine, Omaha, 1932; interned at the Jennie Edmundson Memorial Hospital in Council Bluffs, Iowa; major, medical corps, Army of the United States, serving at Bataan, where he was captured by the Japanese; died in the Philippine Islands Oct. 8, 1944, aged 40, of heat exhaustion.

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Foreign Letters

LONDON

(From Our Regular Correspondent)

April 6, 1946.

Shortage of Physicians for the National Health Service

Addressing the Insurance Institute of London, Dr. Charles Hill, secretary of the British Medical Association, said that there would not be enough doctors to provide at once the full service promised by the national health bill. A statistical inquiry by the British Medical Association showed that the average person insured under national health insurance called on his doctor for more than five items in the course of the year. For a considerable portion of the community there would be an increase in the demand for medical service comparable with that experienced on the introduction of national health insurance, which increased threefold the calls made on doctors by those who then came into insurance. Dr. Hill estimated that general practitioners alone would be called on to provide some 40 million extra items of service each year. The shortage of consultants was likely to be even more serious. Under the new service there would be a natural tendency for the public to ask for a consultant's opinion as a right, and it would be difficult for the general practitioner to refuse in all cases. Bearing in mind that for certain branches of medicine and surgery no consultants were at present available, it could be concluded that for some time the promised service could not be provided.

Another question was that of certification for sick benefit. The scheme was open to the whole community and the benefits were a substantial increase on those of the present national health insurance scheme. At present a married man with a wife at home and one child received $3.50 a week sickness benefit, dropping to $2 disablement benefit after twenty-six weeks. Under the national insurance bill the same man would receive $10 a week with no drop in rate with time. Unless the individual patient could feel that the doctor would use his genuine and unbiased judgment in signing or not signing the certificate which the patient sought, there would be a good deal of discontent.

The Postgraduate Federation

A system of postgraduate teaching has been developed in recent years in this country. In 1932 the British Postgraduate School was formed in connection with the Hammersmith Hospital in London. Its object was to train prospective specialists, to instruct doctors needing advanced teaching and to provide short refresher courses for general practitioners. This hospital could not provide full facilities for postgraduate education or make arrangements for training in special branches of medicine. This is now to be corrected. The school is to be reconstituted as a federal organization under the name of the British Postgraduate Medical Federation to include the Hammersmith Hospital and various institutes in special subjects. Grants are to be made to the Institutes of Laryngology and Otology, Ophthalmology, Neurology and Child Health, and later to an Institute of Dermatology. Other specialist hospitals have indicated their willingness to take part, but their teaching schools have not sufficient accommodation at present for the formation of specialist institutes. However, they may be associated with the federation and used for specialist training. Increased demands by students from overseas have necessitated expansion of the clinical facilities in general medicine and surgery. Some of the London county hospitals and the special hospitals have offered to take additional graduate students.

Advanced courses in general medicine and surgery may soon be offered to specialists who require a short period of instruction to complete their training for a higher degree. Registrarships for trainee specialists are to be established at the specialist hospitals as well as at Hammersmith. It is also hoped that traveling fellowships may become a feature of the training. Fortnight refresher courses for general practitioners are to be replaced later by part time clinical assistantships, monthly meetings, annual intensive courses of one week and week end courses. The director of the British Postgraduate Federation is the distinguished physician and teacher Sir Francis Fraser, late director general of the Emergency Medical Service, which was formed to deal with casualties and diseases in Britain during the war.

PARIS

(From a Special Correspondent)

April 5, 1946.

Medical Research in France Under Nazi Occupation

Despite tremendous difficulties encountered by research workers in the Nazi-occupied territories, French medical research during the occupation was far from negligible. However, lack of personnel, morale and materials, especially laboratory animals, has restricted medical progress in France since 1940. French physicians paid heavy tribute to the Nazis. Some committed suicide, like Thierry de Martel, the brain surgeon, the day the Germans entered Paris, and Jacques Charles Bloch, when the Gestapo came to arrest him. The surgeon Bernard Desplats and others were arrested. Many were deported, including Charles Richet, Desoille and Weiss. Of many who died in Germany or a few days after their return to France were Levy-Valensi, Hamburger and Leon Kindberg. Some escaped from the Gestapo but were obliged to hide, such as Vallery-Radot, Debre, Etienne Bernard and Haguenau.

If one remembers the worries that nearly every Frenchman had concerning deported relatives and friends, coupled with anxiety for his immediate family and his own security (arrest was likely at any moment, followed too often by reprisal shootings) and particularly the most serious worry of all—that for the fate of his country: in brief, the state of mind attendent on complete uncertainty even regarding one's immediate future, it is easy to understand that even scientific problems of paramount interest seemed comparatively unimportant alongside the disappearance of all moral standards and social laws.

The lack of animals for experimental purposes made it impossible for physiologists and experimental pathologists to carry on their work. This was due to shortage of food and heat. Some hospital laboratories were allowed to breed guinea pigs, mice and rats, which were fed on garbage. It seemed irrational at that time to use rabbits for experiments instead of eating. It was almost impossible to prevent theft of the rabbits; the thieves could hardly be blamed. A sport current at the time was dog and cat hunting. Some investigators specialized in hunting down animals belonging to the Germans. Thus some physiologic experiments could occasionally be performed. Bacteriology and microscopic pathology suffered because of the impossibility of heating the incubators, since electricity and gas were cut off at irregular hours at night and day. Shortage of glass impeded chemical research somewhat.

MEDICAL INVESTIGATIONS DURING THE OCCUPATION

1. Observations were made on haptoglobin, which is a blood protein which activates the peroxidase function of hemoglobin in a specific manner. By studying the enzyme power of hemoglobin mixed with the patient's serum on the reaction of ethyl peroxide with hydroiodic acid one may measure accurately the quantity of haptoglobin in the serum. Increase of haptoglobin occurs in all infections and is a test of the activity of infectious processes. The test is more accurate than the blood sedimentation rate. It is useful in many pathologic conditions, especially pulmonary tuberculosis, in which the degree of activity of a lesion can be measured.

2. First observations of the antithyroid action of aminothiazole were made in a factory where the substance was being handled by workers who subsequently developed symptoms of goiter and myxedema. This effect was confirmed by experiments on rats and rabbits. Aminothiazole has been used for the treatment of toxic diffuse goiter and apparently is far less toxic but less effective than thiourea or thiouracil. Further study is necessary.

3. Lavollay and Parrot have isolated a compound named epicatechol, which has effects similar to those of vitamin P in diminishing capillary fragility. Studies are now in progress to evaluate the use of epicatechol for certain types of purpura and edema.

4. Dr. B. N. Halpern has made extensive studies of synthetic antihistamine compounds. More than thirty substances were investigated, of which two were found to have a high antihistamine potency; one was a derivative of benzylaniline and the other a salt of benzylaminopyridine.

5. J. Reilly has done important research on the role of the sympathetic nervous system in many conditions, particularly nephritis.

6. Other interesting work includes description by Brumpt of a rapid technic of seroagglutinin test for typhoid and typhus, Debré's observations of the "neuroedematous" syndrome in infants (paralysis and edema of the legs), treatment of polycythemia by Duvoir by inoculation with Ancylostoma duodenale and radiologic studies of early cancer of the stomach by Gutman.

Unfortunately French physicians have had opportunity to study many deficiency diseases widely as a result of the malnutrition of the French population, such as deficiency edemas, diarrhea, beriberi, scurvy and amenorrhea.

Disorders of Water Metabolism

In the *Semaine des hôpitaux* de Gennes and Wallet discuss 300 cases of young women and girls, who, notwithstanding the food restrictions, increased their weight by 10 to 15 Kg. during a few months. This exaggerated deposit of flesh was mostly spread on the legs, the hips, the abdomen and the breast. There was a deep and hard infiltration of the skin of the cellulitis type (subcutaneous infiltration without inflammation). Vasomotor troubles appear in the extremities, which are red and cold and often show chilblains even out of the winter season. The patients suffer from constipation, are susceptible to cold and lose their hair; their nails break. They present menstrual troubles as the menses diminish even to complete amenorrhea. The main factor is the retention of water, but the process is not the same as in nutritional edema. There is no edema but a cutaneous and subcutaneous hardening. Contrary to nutritional edema, the amount of protein in the serum and the blood chlorides are normal. The basal metabolism is also normal, whereas that of nutritional edema is reduced, as well as the function of the heart and the activity of kidneys, as stated by Mauriac in "Food Disequilibrium and the Pathogenicity of Edemas." De Gennes and Wallet believe that the endocrine factor is obvious in the cases under study. The authors find that estrogen, even in large doses, aggravates the situation, whereas corpus luteum extract improves endocrine insufficiency from time to time but never diminishes the increase of tissue. The authors admit that the abnormal endocrine state in certain women creates a condition favorable to the mechanism of water retention and that the food factor appears to be the decisive one that sets the mechanism in motion.

"Medical Days in Paris"

An annual "Medical Days" conference on recent medical progress in France and abroad will be instituted by Pasteur Vallery-Radot May 17 to 19 at the Hôpital Broussais, 96 Boulevard Didot, Paris. Speakers and their subjects will include Louis Aragon, medicine of today as seen by a writer; Varangot and de Gennes, recent progress in endocrinology; May, endocrinology of the thyroid; Justin Bezançon, avitaminosis; René Gutman, early diagnosis of the cancer of the stomach; Hamburger, Milliez, Fauvert, Gibert, renal pathology; Cachera, hepatic pathology; Huriez, R. Martin and Lemierre, sulfonamides and penicillin; Tzanck, blood transfusion and reanimation; Halpern, synthetic antihistamine; Soulie, recent discoveries in electrocardiography.

OSLO

(From a Special Correspondent)

March 23, 1946.

Medical Activities During and After the War

The head of the Norwegian Public Health Service, Dr. Karl Evang, and many other Norwegian doctors left Norway soon after the German occupation in April 1940 and established an efficient health service abroad, with centers in London, Liverpool, Newcastle, Glasgow, Cardiff, Halifax, New York and Bombay. Medical care was needed not only for the Norwegian army and navy stationed abroad, constantly recruited by young Norwegians escaping from Norway, but also for the merchant service with its 45,000 seamen. Every seaman was provided with a personal health card on which the most important data concerning his health could be entered. In 1943 a central register for all the syphilitic was established in London, and in due course over 3,000 Norwegian seamen were entered in this register, which, it is hoped, will be kept up to date in the future. Many other measures, including the detection of tuberculosis among seamen, were introduced during the war and will be continued with the modifications rendered necessary by peacetime conditions.

The Norwegian medical profession has been busily putting its house in order during and after the war. Before the war the head of the Public Health Service held a subordinate position in the government, with a layman between him and the cabinet minister responsible for health affairs. Dr. Karl Evang is now the administrative head of the service. He has returned to Norway to face many problems, one of the hardest of which is the shortage of doctors. Some 100 Quisling doctors have been removed from the medical register, and many of them have been locked up. The closure of the university by the Germans has delayed the education of between 250 and 300 medical students. Whole districts in Norway have consequently been robbed of all medical aid, and Dr. Evang has been obliged, much against his own inclinations, to exercise dictatorial powers in effecting a redistribution of the doctors in Norway. By the autumn of 1945 some 60 doctors had been directed to take up such special emergency duties. A few months later, thanks to the qualification of a fresh batch of medical students, this situation became somewhat eased. It now appears that the least obnoxious of the Quisling doctors will be allowed to return to the fold.

The Journal of the Norwegian Medical Association

The *Tidsskrift for den norske Lægeforening* is the counterpart of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, representing the Norwegian Medical Association, which an envious trade union official once described as the most powerful trade union in the country. As the mouthpiece of the great majority of the Norwegian doctors, the *Tidsskrift* was promptly appropriated by the Germans in 1940 and run as a vehicle for German propaganda by Norwegian Quisling doctors. Hence this little terracotta colored fortnightly publication became odious to the medical profession, whose members could and did withhold their subscriptions but could not prevent the continued delivery of the publication to their homes. When the Germans were expelled and the old staff of the journal took charge of it again, a need was felt to give it a new form. The new version of the *Tidsskrift*, still fortnightly, is a great improvement, with the upper third of the cover blue, the lower two thirds white, and the format considerably enlarged, 30 by 21 cm. instead of the former 21 by 15 cm.

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BCG Vaccination Against Tuberculosis

Soon after the German occupation of Norway in April 1940 the tuberculosis experts in the Norwegian Public Health Service concluded that there was every prospect of a serious rise in the tuberculosis morbidity and mortality. Measures to counteract this anticipated rise were discussed and, in view of the favorable observations by Heimbeck, Scheel and others on BCG vaccination since its introduction in 1927, it was agreed that this vaccination should be carried out on Pirquet negative persons on a large scale. In Oslo alone about 13,000 persons were thus vaccinated by the health authorities and several times this figure in the whole of Norway. Dr. G. Hertzberg of the tuberculosis department of the Oslo Municipal Health Service recently presented a study of the influence of this vaccination on the tuberculosis morbidity and mortality in Oslo. With the aid of Dr. Julie Backer, chief of the Norwegian Central Bureau for Statistics, he presents a statistical calculation showing that when the annual tuberculosis mortality in Oslo for all persons up to the age of 50 is placed at 100, the corresponding figure for BCG vaccinated persons is about 18. This comparison is even more favorable to BCG with regard to the number of infectious cases of tuberculosis, the figures being respectively 100 and 10.

MEXICO CITY

(From Our Regular Correspondent)

April 5, 1946.

Epidemic of Meningococcic Meningitis

An epidemic of meningococcic meningitis occurred from August 1945 until March 1946 in San Luis Potosí, a city situated in an unprotected, semidesert valley at an altitude of 6,187 feet. It has a temperate climate. Dust storms are frequent all the year round. The estimated population is over 100,000 inhabitants. The standard of life is low. The northern and southern quarters of the city are overcrowded and it is common to find families of ten and twelve members living in a single, ill ventilated, adobe built room. Most of the streets in the town are unpaved. The water supply is insufficient and the sewerage system inadequate. Nevertheless San Luis Potosí is an important industrial and commercial center.

The study of the statistical data of the last five years shows that only 1 case of cerebrospinal meningitis occurred in 1940 and another in 1943. Perhaps several cases, which were registered later in 1944 and in the earlier months of 1945 and diagnosed as simple meningitis, were of meningococcic nature. The source of the outbreak has been attributed to a "bracero," a farmer back from the United States, or a tourist, who acted as carrier. The curve of the outbreak is typical of an epidemic of this kind, showing a rise in November 1945 and higher in December, reaching the highest peak in January of the present year. Five cases were reported during the first week of August 1945, 6 in September, 21 in November and 90 in December. In January 211 cases were registered, in February 82 and in March 54. The total number of cases since the beginning of the epidemic up to March 31, 1946 has been 470. During the last week of this month the outbreak subsided.

From a clinical point of view all types of the disease were observed, from the septicemic, fatal ones to the benign, atypical and abortive forms. In all cases Neisseria intracellularis was found in the spinal fluid. Basic treatment consisted in the intrathecal administration of 50,000 units of sodium penicillin followed by intravenous and intramuscular injections of penicillin and oral administration of sulfadiazine at a dose of 0.1 Gm. per kilogram of body weight for forty-eight hours. The low mortality rate is believed to be due to this method of treatment.

Based on previous experience, sulfadiazine was prescribed as a preventive measure to 90 per cent of the inhabitants. For the two days January 16 and 17 approximately 75,000 people received the drug. Generally a dose of 0.3 to 0.4 Gm. per kilogram of body weight was given by a nurse one day each week. The same amount was given to adult contacts and proportional amounts to children for three consecutive days. Except for 4 cases, which probably were in the incubation period of the disease, not a single case was registered among the people treated with the sulfonamide. Other cases of epidemic meningitis have been reported in Guadalajara, Jalisco, in the western zone, Saltillo, Coahuila and Monterrey, Nueva Léon, in the northern states and in Mexico City, but fortunately they have been of sporadic character.

Studies on Scorpion Venom

Dr. Efren del Pozo, professor of physiology in the Politechnic Institute, Dr. Guillermo Anguiano Landin of the School of Public Health and Hygiene and José González of the National School of Biologic Sciences have been performing a series of studies with the venom of the three most poisonous scorpions in Mexico: Centruroides noxius, Centruroides suffusus and Centruroides limpidus from the states of Durango, Colima, Nayarit and Guerrero, where they are quite abundant. The action of the venom on the vasomotor system was studied in cats, rabbits and mice. The workers report that the venom of these scorpions causes a rise in the blood pressure, a liberation of epinephrine and bradycardia. The poison does not affect the vascular reflexes when central stimuli are applied to the sciatic and vagus nerves. In the first studies the authors conclude that all the effects of the scorpion venom are due to the stimulation of the preganglionic neurons of the sympathetic nervous system. Professor Anguiano carried on further observations to determine the mathematical formula of scorpion venom neutralization. He states that such a poison follows a trend very much like the one followed by snake venom. The trend of neutralization, under the conditions of the experiment, varies according to a linear function $y = a\ (x-l)-b$. By these studies the writer attempts to derive the basis for the correct titration of antiscorpion serums.

Mexican Association of Gynecology and Obstetrics

The National Association of Gynecology and Obstetrics was recently founded. The following officers have been elected: president, Dr. Isidro Espinosa de los Reyes; secretary, Dr. Carlos Guerrero, and treasurer, Dr. Manuel Urrutia. Publication of a "Revista de Ginecologia y Obstetricia," which will appear sometime during this month, was approved at the first meeting.

Marriages

JOSEPH A. GRADY, Wakefield, Mass., to Miss Grace M. McFail of Tampa, Fla., in Washington, D. C., March 18.

HAROLD S. SANDHAUS, Lancaster, Pa., to Miss Helen Marion Newmark of Jamaica Estates, L. I., N. Y., January 20.

MILLARD F. HUDSON, Capt. (MC), U. S. Navy, to Mrs. Helen O'Rourke Hanson in New York, February 19.

WAYNE P. HYATT, Tazewell, Tenn., to Miss Louise Windham of University, Miss., in Berkeley, Calif., March 2.

H. HAMILTON COOKE, San Jose, Calif., to Mrs. Trudy Birch George of Carievale, Sask., Canada, March 6.

VINCENT J. SCHILLECI, Bessemer, Ala., to Miss Frances Amanti of New London, Conn., February 28.

LIONEL T. SERVIS to Miss Elizabeth Knickerbocker Wetherbee, both of Milwaukee, February 2.

JEHU PATTERSON COOPER III to Miss Jean Post Tompkins, both of Metuchen, N. J., recently.

DAVID E. ROSENGARD, South Boston, Mass., to Miss Thelma Gorvers of Lynn, January 19.

LEONARD CHATELAIN, Cut Off, La., to Miss Janet Alma Stokes of Bunkie, October 22.

F. JOSEPH BRINIG to Miss Nancy Elizabeth Dwyer, both of Erie, Pa., February 16.

Correspondence

CHRONIC BRUCELLOSIS

To the Editor:—In the February 9 issue of THE JOURNAL Henry M. Benning, in his paper on "Chronic Brucellosis," presents the totally unfounded thesis that a positive skin test to brucellergen indicates active infection with the disease. This conclusion will certainly be challenged by many students in this field who feel that the intradermal test indicates only skin sensitization to a brucella antigen. An unequivocal diagnosis of brucellosis is dependent on isolation of the causative organism in culture. Many observers feel that a rapidly rising titer of specific agglutinins in the blood is strong presumptive evidence of active infection. The mere presence of positive agglutinins in relatively low titer, or of a positive skin test, or of a high opsonocytophagic index is totally inadequate in establishing a definite diagnosis of the disease.

The incidence of positive skin tests to various brucella antigens, and of positive agglutinations for Brucella abortus, is surprisingly high among normal healthy people in many areas, and only the most sanguine observer will conclude that this high rate is an index of morbidity of chronic brucellosis. For instance, 15 per cent of the healthy medical students of the University of Oregon Medical School show a positive skin test to brucellergen. Over 5 per cent of all normal persons in this area show positive serum agglutinins of 1/80 or higher to Brucella abortus. N. B. Wise (Evaluation of Brucella Opsonocytophagic Test, *Am. J. M. Sc.* **200**:521 [Oct.] 1940) similarly studied a group of normal medical students at Duke University and found that 10 per cent showed positive skin tests and 20 per cent showed significantly high agglutinin titers for Brucella abortus in the blood. One must be very cautious in associating these incidental laboratory findings with chronic complaints of patients. Such restraint is not shown in the numerous overzealous reports, such as this one, which have appeared recently in the American literature.

Dr. Benning's paper illustrates the most disappointing aspect of many similar case reports of "chronic brucellosis"; that is, the reliance placed on the notoriously misleading therapeutic test. Patients with all sorts of chronic complaints are found to show a positive skin test for a brucella protein or to have agglutinins for the organism or a positive opsonic index and are promptly diagnosed as having chronic brucellosis. The patients are then given one of the brucella antigens (vaccine, brucellin) and are reported to "feel much better" or as "cured." These "cures" are then offered as proof of the original diagnosis. Such *post hoc* reasoning is always open to serious question and has accounted for waves of uncritical enthusiasm for all sorts of therapeutic agents, which in a large measure have retarded the advance of scientific medicine.

The four protocols recorded by the author as "textbook" instances of brucellosis are completely unconvincing. Case 1, for instance, presents no evidence whatever of brucellosis in the data recorded other than a positive skin test and the fact that the patient felt "like a million dollars" after his injections. The patient admittedly had chronic gallbladder disease with recurring attacks of cholecystitis, and the attempt to explain his symptoms on the basis of brucellosis is patently redundant. The patient's gallbladder was ultimately removed. No statement is made as to whether it was found to be a focus of brucella infection, but one can be certain that if it was the report certainly would have proclaimed it.

The second patient presumably recovered from symptoms of coronary artery disease following brucellin treatment! The diagnosis of brucellosis here is just as dubious as that of the coronary disease, which was apparently made on the basis of Q_3 T_3 inversion in the electrocardiogram. Such changes are often quite normal, and minor alterations in them may be due to respiratory variations in the position of the heart. They are apparently presumed by Benning to be abnormal because he refers to "minor temporary improvements [sic] in Q_3 and T_3." In this case, as in the first, no valid proof of the diagnosis of brucellosis is offered other than the skin test. The other protocols are equally unconvincing and will not stand under any sort of critical analysis.

At the present time we are having a brucellosis scare in this area. Our "epidemic" stems from the reports of two enthusiastic local practitioners who have supplied to the health department of the city of Portland almost all of the many hundreds of cases of brucellosis reported to that bureau in the past two years (Records of Department of Health, Portland, Ore. [personal communication, Dr. Thomas Meador, health officer]). Other clinicians, including all the competent internists associated with the University of Oregon Medical School, have been able to find practically no cases of brucellosis either verified or questionable. Furthermore, in the University of Oregon Hospitals and Clinics we have had the opportunity of studying large numbers of patients who have been previously treated and "cured" or "greatly improved" by injections of brucella vaccine by "brucellosis specialists." These patients suffered recurrences of symptoms after a few months of treatment, and careful follow-up studies has revealed such maladies as carcinoma of the kidney, tuberculosis, Hodgkin's disease, leukemia and hyperthyroidism. The large majority of them however were found to be suffering from clearcut psychoneuroses. As might be expected, temporary improvement in many of the psychoneurotics was usually noted for a short period following optimistic injection therapy, only to be followed by the inevitable recurrence of complaints. The hypodermic needle, preferably a dull one, in the hands of a zealous clinician is a potent psychotherapeutic weapon. The reported "cures" after vaccine or brucellin therapy must be interpreted in this light.

There are many students of the subject who feel that chronic brucellosis in human beings is a great rarity. A few incontestable cases have been reported in which the organism has been isolated from the oviduct, the gallbladder, joint fluid or the blood years after what was probably the initial infection (Evans, Alice C.: Studies on Chronic Brucellosis, *Pub. Health Rep.* **52**:1072 [Aug. 6] 1937). However, any one who contends on the basis of positive skin tests that an appreciable percentage of the population is chronically ill as the result of harboring viable brucella organisms in the body certainly has the responsibility of marshaling more convincing evidence than that presented in this paper.

There is clearly an urgent need for a cautious scientific approach to the whole confused problem of chronic brucellosis. Dr. Benning postulates, for instance, with no proof whatever, that small splenic abscesses may be the focus of chronic brucellosis and then makes the astonishing statement that "possibly splenectomy should be contemplated as often as cholecystectomy." This is an alarming indication of the direction which may be followed next by enthusiastic brucellosis therapists.

MORTON J. GOODMAN, M.D., Portland, Ore.

[In reply to this communication Dr. Benning writes:]

To the Editor:—It is of course to be expected that such criticism as that of Dr. Goodman would arise, since this is at present a controversial subject. Scores of letters commenting on the article have been received to date, and Dr. Goodman's is the first unfavorable one.

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The isolation of Brucella abortus as Dr. Goodman suggests is of course the ideal way to establish the diagnosis of chronic or acute brucellosis. However, if the diagnosis of each case is to be made only on this basis, I feel that many cases of the disease will be overlooked. In analogy, if it were still necessary to isolate the Koch bacillus in each case of tuberculosis or Treponema pallidum in each case of syphilis, treatment of many cases of these diseases during their most vulnerable phase would be omitted for the sake of absolute accuracy of records.

A positive skin test to brucellergen means, as any skin test means, a reaction or conjunction of antigen and antibody. It is not a question of whether the patient is infected or not but rather how, how much and when. This is no place to belabor the argument that for skin sensitization a previous active infection, possibly still active, must have occurred. In addition to the reasons given in my article, the best one being the failure of heat-killed bacterins to immunize animals, I think it is interesting to take note of the fact that the brucella antigen complex is a huge molecule with a weight of about one million (Landsteiner, Karl: The Specificity of Serological Reactions, p. 223, quoting Chargaff et al. and Miles and Pirie, Cambridge, Mass., Harvard University Press, 1945). Numbers of these molecules little short of virus size make up the living brucella cell. If the bacterium lives it invades or is carried across the cell membrane of the host by macrophages or leukocytes and sets up infection plus antibodies. If the bacterium dies the antigenic protein complex with the still large polysaccharide molecule is subject to the effects of digestive ferments and so never crosses the cell membrane. Oral immunization by bacteria is extremely doubtful.

Be that as it may, the question of infection in skin positives finally is not qualitative but quantitative. If one is surprised to find that 15 per cent of medical students of Oregon, assumed a priori to be normal and healthy, are skin positive, one need not deny the validity or the implications of the test but merely ask "how healthy," then ask if treatment is demanded. The clinician then listens to his patient's story, summarizes the physical findings and on the basis of his considered judgment, not on the basis of a positive skin test alone, he treats his patient.

Leopold Lichtwitz (Pathology and Therapy of Rheumatic Fever, New York, Grune and Stratton, 1944) has best summarized the problem when he states that "skin hypersensitivity is immunity arrested at a dangerous stage of imperfection." An excellent discussion of hypersensitivity by Aikawa is found in the *Annals of Internal Medicine* (**23**:969 [Dec.] 1945).

The cases will have to stand on their merits. As a matter of fact patient I, B. L., though working steadily since his cholecystectomy a year ago, had a return of a few of his symptoms several months ago. I make no claim to his having his brucella focus removed or to his eventual cure until he fails to react to brucellin and brucellergen.

Since my paper was submitted for publication in August 1945 an interesting case of brucellosis has been reported from the Mayo Clinic (*Proc. Staff Meet., Mayo Clin.* **20**:455 [Nov. 28] 1945) in which the spleen seems to have been the focus which maintained the active infection over a period of several months. Splenectomy was finally performed, following which medical treatment apparently has produced a permanent cure. This finding lends considerable support to the idea, which so horrified Dr. Goodman, that small splenic abscesses may be the focus in chronic brucellosis.

Only careful clinical judgment and a wide experience with these skin positive patients will permit one to steer a course between ultraconservatism which sees no brucellosis without a positive culture, and excessive enthusiasm which requires only a positive skin test without clinical verification.

H. M. BENNING, M.D., Santa Barbara, Calif.

SPRAINS IN ATHLETES AND PROCAINIZATION

To the Editor:—I was interested in your reply in the March 9 issue of THE JOURNAL to the query of Dr. D. L. Hollis of Biloxi, Miss., regarding the procaine injection of ankle sprains in football players.

While procaine is useful in the treatment of certain minor sprains in nonathletes, the experience of this department for the past ten years, based on the treatment of approximately 75 ankle sprains a year in athletes, has led to the conclusion that it has no place in the treatment of any sprain sustained in contact sport.

A sprain is a partial rupture of a ligament. When the protective function of pain is eliminated by procaine and the ligament is subjected to the violent stresses and strains of football, the partial rupture might well become complete.

Furthermore, it was found some years ago in a small experimental series that the contact athlete whose ankle ligaments had been anesthetized lost his sense of timing and coordination, played badly and was more likely to sustain other injuries. One varsity halfback, who played badly and briefly with a procainized anterior tibiofibular ligament sprain, stated after return to the bench that while running he had no sense of the position of his ankle in space.

A complete exposition of this point of view regarding the diagnosis and treatment of sprains in athletes will be found in "Athletic Injuries" by Dr. Augustus Thorndike, Philadelphia, Lea & Febiger, 1938.

THOMAS B. QUIGLEY, M.D., Boston.
Surgeon, Harvard Athletic Association.

AEROSOL PENICILLIN

To the Editor:—Having read a laudatory article by H. N. Vermilye in THE JOURNAL, Sept. 22, 1945 extolling aerosol penicillin in sinusitis and asthma, I studied this procedure in 74 cases of bronchial asthma. Ages varied from 5 to 71 years, the sexes being represented about equally. The patients included physicians, nurses, teachers, housewives, butchers, laborers and school children. It was important to choose a type which I classify as asthmaticus persistans, variously referred to as "intrinsic or bacterial asthma," the intractable variety.

Treatments were conducted in the patients' homes under instructions from trained technicians for two to four weeks, using an oxygen tank to nebulize 20,000 units of penicillin through an attached atomizer every three to four hours.

The results were strikingly disappointing and almost with complete variance with Dr. Vermilye's report. A number of patients grew worse as the result of irritation from the penicillin. Some developed dermatitis and were unable to continue after two weeks' therapy. Those that did continue for the full period of four weeks were divided into two groups, 15 per cent who thought they may have been improved slightly and 85 per cent who were definitely not benefited. As compared with the regular procedure in bacterial allergy, such as iodides, bronchodilators, sedatives, vaccine therapy and general care, aerosol penicillin in its present status makes a comparatively poor showing. Incidentally, oral and parenteral penicillin therapy in total doses of 500,000 to 1,000,000 units was without value in many of the cases of the asthmaticus persistans type.

My conclusion, therefore, at this time is that aerosol penicillin (also oral and parenteral penicillin) is of questionable value in a small percentage and of no value in the majority of cases of bacterial asthma and sinusitis.

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Council on Medical Education and Hospitals

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Forty-Second Annual Meeting, Held in Chicago, Feb. 11 and 12, 1946

DR. HERMAN G. WEISKOTTEN, Syracuse, N. Y., Presiding

FEBRUARY 11—MORNING

IMPACTS OF THE WAR ON MEDICINE

Development of High Educational Standards by the Medical Profession

DR. RAY LYMAN WILBUR, Stanford University, Calif.: This paper appeared in THE JOURNAL, April 20, page 1055.

Medical Progress and Medical Education During the War

DR. PERRIN H. LONG, Baltimore: This paper appeared in THE JOURNAL, April 13, page 983.

Medical Education in Europe

DR. WILBURT C. DAVISON, Durham, N. C.: This paper was published in THE JOURNAL, April 6, page 921.

Affiliation of Veterans' Hospitals with Medical Schools

DR. PAUL B. MAGNUSON, Washington, D. C.: Less than four months ago there was announced a plan for affiliation of Veterans Administration hospitals with medical schools. The plan was simple in its outlined form. Basically it proposed that medicine be practiced in the Veterans Administration hospital as it is practiced in the university hospital, and that medical education be coordinated so that the Veterans Administration hospital would become a postgraduate teaching unit of the university hospital group. Personnel and methods of medical practice and methods of operation would be the same as those of the university group. The Veterans Administration proposed to administer such a hospital and to assume its proper legislative responsibility of professional care, the medical schools to assume the guidance of professional care and the operation of medical education.

There have been established new part time groups of personnel for the Veterans Administration and through the medium of recommendation only by dean's committees, consisting of men of professional caliber supplied by the school locally; the proper professional qualifications are present in all personnel thereby afforded. Conditions and compensation for employment are provided so that good medicine and good medical postgraduate education may be achieved by the acquisition of the highest type of personnel. Residencies have been established and the conditions, considerations and compensation for such employment for residents have been established to fit in each locale with the highest development of postgraduate education there present. The principle of residencies to lead to specialty board qualifications has been adopted as a principle. Provision is made for basic science training and the inclusion of basic science principles in the practice of medicine under the regulations of the bill that established a department of medicine and surgery.

In four months we have received the acknowledgment of their willingness to cooperate of fifty of our approved medical schools. This is a complete group of all those that are in near enough proximity to Veterans Administration hospitals to be applicable. This affects seventy-six of our ninety-seven present hospitals and six of the seven army hospitals. We expect to take over for temporary use on March 31. This affects over 60,000 Veterans Administration beds. It is a stupendous job, but the cooperation of the schools and the medical profession has been constantly exhilarating.

DISCUSSION OF DR. LONG'S PAPER

DR. C. SIDNEY BURWELL, Boston: In my judgment the coordination of research through the Committee on Medical Research and the other committee was a highly successful demonstration of the possibilities of coordinated research. It was successful for two reasons which are important to us. One is that the coordination was done by people who had first hand acquaintance with science and with investigators in their own right and, second, and the more important one, was that there were good investigators to do the research. The programs that were successful were the programs that had the most successful investigators in them. One of the demonstrations, it seems to me, to have come out of all this experience with research during the war is that there is no substitute for the first class man in medical research. That leads me to point out the great importance of trying to keep from having a lost generation in medical research. For six years almost no individual has had an opportunity to prepare himself for a life of teaching and investigation in medicine. I think one of the major responsibilities of medical schools now, this moment, is to try to find in the men coming back from army and navy service the men with the kind of ability that can be developed into research ability and, having found it, to give them an opportunity not to do research for profit but to develop in themselves the capacity to go on. I know of nothing that is more important to the long distance future of medicine than an attempt to restore what is now a sad lack of experienced people for academic medicine. Dr. Magnuson referred to a principle in medical education which perhaps he will permit me to restate. The representatives of the three schools in Boston that were discussing the formation of the dean's committee there were troubled by an implication in one of the earlier publications of the Veterans Administration that there was a separate responsibility for the teaching of residents and for the carrying on of clinical work and pointed out to Dr. Magnuson their belief that there was a misconception in the idea that the training of residents could be dissociated from the carrying on of the clinical work in the hospital, because we pointed out that the most important influence in the training of residents is the quality of clinical work that is carried on in the hospital. That goes not only for residents but for medical students and for men who are learning to do research.

DISCUSSION OF DR. DAVISON'S PAPER

DR. WILLIAM S. MIDDLETON, Madison, Wis.: The deterioration of medical education and of medical practice in Germany was recognized, if not completely evaluated, before the invasion of Europe. In the years of the activity of the Nazi ideology there had been a sacrifice of a considerable segment of the productive scholarship of these universities. Furthermore, there had been an abbreviation of the medical course so that during the war one came to a period when the medical students attended nine to ten lectures, or series of lectures of three months each, as opposed to the six months term of the prewar period—two and one-half years of medical exposure largely on the benches, as Dr. Davison has pointed out. There then came a year of field service, and this field service was in the line, when the graduate served as a noncommissioned officer. He thereafter was eligible for his rank of officer. In this particular development apparently all medical advance in the area about and outside Germany was lost sight of. The circumstance of level of practice could be judged on the basis of performance of the protected personnel that came to our lines, who were then given the responsibility for the care of the German prisoners of war. The fact that they knew nothing about penicillin might have been anticipated. They also had a very limited idea of the general principles of medicine. In all my contact with these many installations there were only two that performed on a level that might be comparable to our mediocre hospitals in the European theater of operations. These two were derived from the faculty of the University of Strasbourg. It is quite apparent that the wide general principles of preventive medicine had not permeated the German army or high command. The incidence of clinical diphtheria was extremely high. There were

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actual outbreaks of dysentery and typhus in their midst, and then the singular, contrasting or controlled experiment they gave us in the incidence of tetanus in their unprotected troops. Only the Luftwaffe and certain elements of the paratroops had received tetanus toxoid protection. In the protected American forces there was but one instance, and that a fatal one, among the protected soldiers, protected through the medium of tetanus toxoid. The obvious answer is that they had not followed medical progress. They had sowed the men and reaped the world. I have been very much interested in the attitude toward medical education in France. I was included in a group discussing with the dean's committee the advantages of graduate exposures in America. The members of the committee were interested in the number of exposures, the types of exposures that represented developments of four years before 1945, the period of occupation. They were not fundamentally interested in basic changes in their formula of medical education. The veil that is drawn over Soviet medicine was keenly felt in the European theater of operations. We had not close access to their developments. We nevertheless realized that they were heading toward an ideal that had not yet been attained. It would answer the mutual purposes of medicine in the Soviet Union and in the world at large if there were greater candor on the part of both contracting parties. It is a circumstance of importance to bear in mind that the British have for over four years had an Anglo-Soviet Union that has effectively, first, initiated a one-way movement of information, Britain to Russia, and now recently is obtaining a return lend-lease effect, if you will. Britain suffered primarily from the failure to envisage the effects of a reducation of graduate training, and as early as Oct. 8, 1942 General Hood, in one of his directorate meetings, stated that the R. M. C. was the greatest consumer of medical manpower and until this demand decreased the supply would become increasingly insufficient. At that early date, the fall of 1942, it was quite apparent that the British were suffering from a depletion in their ranks of specialists; that, if this continued, the short term training would lead to a decrease in the efficiency of the services in these several specialties. Obviously the American people, being independent of thought and action, sacrificed the same end rather than profit by the example of the British. I think that this particular commentary on our shortsightedness is beginning to show its effects in our tremendous concern for the future of graduate medical education.

Training in Medicine Under the Army Specialized Training Program

COLONEL FRANCIS M. FITTS, M. C., Office, Director of Military Training, A. S. F.: Between May 1943 and October 1945, 20,336 enlisted men were assigned to Army Specialized Training Units at seventy-six approved schools of medicine in this country. These enlisted men—A. S. T. P. trainees—were there detailed for instruction in medicine in the standard curriculum of the institution. After successful completion of their medical studies 10,098 trainees have been discharged from their enlisted status in order to accept, with only negligible exceptions, commissions in the Medical Corps of the Army of the United States. Of the 8,049 enlisted men now in the program, 3,356 are scheduled to graduate before July of this year, when the A. S. T. P. will have become a thing of the past. Shall I say "another noble experiment"?

Over 4,500 of the medical officers currently in the Army completed their medical schooling under the A. S. T. P. After from nine to twenty-seven months' additional training in civilian hospitals they were ordered to active military service. In the next five months 5,000 others, now in hospitals, will enter on duties as medical officers. Thereafter 3,900 other A. S. T. P. graduates will become available, at known intervals, as replacements for high score emergency officers who otherwise probably could not be released from the military service. If the compulsion of the national emergency is continued these young officers, trained by the government for this specific duty, will serve a minimum of three years in the Medical Corps, as have so many thousands of their predecessors.

Approximately 897 enlisted trainees have been separated from the medical phase of the Army Specialized Training Program by reason of academic failure, 903 for reasons other than academic. If physically qualified, they have been assigned to other military duties, practically all to units and installations of the Medical Department.

Of the men now in training, 4,693 who will not graduate during the current fiscal year will be separated from the A. S. T. P. next month. Those among them who plan to continue the study of medicine—and are acceptable to an approved school—will be placed in the Enlisted Reserve Corps and released from active military service to pursue their medical studies as civilians. As reservists they will be subject to recall to active duty if they abandon the study of medicine.

If any trainees do not plan to continue in medicine or are not considered so qualified they will be transferred to military duties other than in the A. S. T. P. They will, of course, be eligible for discharge as are all other enlisted personnel.

Medicine in the Future

DR. GEORGE F. LULL, Chicago: The Hill-Burton bill, designed to give better hospital and clinical facilities to the public, has the approval of the American Medical Association and has passed one of the houses of Congress. Determination of location arrived at politically should be fought, as this in many instances will defeat the purpose of the bill. Hospitals cannot be run unless properly staffed.

In the field of medical education, the colleges are getting off the accelerated program and returning to the normal school year. New schools are being formed, and some of the two year schools have extended their courses to four years. This will mean an increase in graduates, but the increase will not be apparent for a few years.

The training of specialists has advanced to a remarkable degree in the past decade. Better trained young men are being made available each year. In addition, more and more young graduates annually desire to continue training in some specialty. This is a laudable effort, as it means several more years of hard work as well as as a sacrifice of earning power. The demands of the government services for doctors to fill their peacetime requirements will be greater than before the war. The Navy Medical Corps has been increased over 200 per cent. The Army Medical Corps has received a piecemeal increase of approximately 50 per cent pending definite legislation as to the size of the Army. The Veterans Administration will undergo an enormous expansion and will require a large full time staff in addition to consultants and visiting staffs.

Many advances have been made during the war which will reflect themselves in future medical practice. One of these is the handling and treatment of the neuropsychiatric patient. In the huge First Army in France there were at one time twenty-one neuropsychiatrists. As a result of having these trained men available, 60 per cent of all neuropsychiatric casualties were returned to duty without leaving the army area. This compares with 50 per cent of medical cases and 70 per cent of surgical cases. Much of the difficulty that was encountered in handling this type of case in the armed forces was due to the fact that very few doctors had any training in treating these individuals.

Preventive medicine has accomplished medical wonders in the present war. In the largest army ever assembled there have been no serious outbreaks of infectious diseases. The accomplishment of disease prevention in the Army is similar to that in civil life with the exception of the fact that, in the Army, population groups are controlled. However, one important factor has stood out in this war as to the results obtained in disease prevention, and that is health education. The line commander as well as the individual soldier must be made health conscious, and this can be done only by health education.

At the present time the United States is the medical center of the world. Better medicine is being taught and practiced in this country than in any other place. We should strive not to stand still but to improve and to retain our place as world leaders in medicine.

FEBRUARY 11—AFTERNOON

GENERAL AND SPECIALTY PRACTICE

Problems in Specialty Practice

DR. PAUL TITUS, Pittsburgh: Critics have charged that the American boards are responsible for the placing of hypervalues on certification, for creating "class distinctions" within the medical profession and for "discrimination" against general practitioners and uncertified specialists. It has been charged that the boards and these activities of theirs have artificially stimulated specialization and that as a result the general practitioner may soon become extinct. In the first place the American boards and the certifications granted by them actually work for and with the nonspecialist portion of the medical profession and, by the rigidity of their standards for recognition of specialists, actually help to maintain the ranks of the general practitioners. The boards have established levels of training requirements which make it impossible for any man to become a self-styled specialist overnight with nothing to refute his claim. What is the chief clamor about specialization we are hearing? It is a clamor for training! This training is wanted so that the applicant can eventually become certified by an American board, so that it must, therefore, be good training. Levels of requirements have not been lowered by the boards during the war. The Council and the American colleges are determined that standards of training shall not be lowered.

Certification is formal recognition of qualification in a specialty based on actual training and experience. The type and amount of training required by the American boards is not something that can be acquired easily or within a few weeks time. Facilities for such training depend on the recognition of a hospital as an educational institution for the training of residents by competent and interested teachers with ample clinical teaching material. "Refresher" courses of short duration are an entirely different matter, and these should and can easily be provided to meet all present demands. Such courses have no standing before the boards for credits as training in a specialty.

Without overexpansion some veterans now seeking residency training may be unable to begin training at once or perhaps at all, but at least the matter of selection for places may still be based to some extent on ability and promise, while overextension of facilities might readily result in poorer training for all. Moreover, fully meeting the demand is probably unnecessary because many veteran physicians who now think they want to tread the long road of required training have neither the aptitude to become specialists nor the fortitude to complete the journey, even with help of government grants to veterans and hospital salaries to residents.

It is the exceptional institution that has facilities, including staff, special services and clinical material, to warrant full approval in all the fifteen specialties represented by American boards. Far more are able to acquire full approval in some of the specialties and limited approval in several or perhaps all of the other specialties. This combination is good, however, because fundamental requirements such as libraries, acceptable laboratories and a formal schedule of general clinical instruction and training in the basic sciences must be established and therefore are available to the weaker as well as to the strong departments. Still other hospitals have such restricted but nevertheless good teaching facilities that they may not be able to have unlimited approval in any of the specialties although they do qualify for limited approval in some of the specialties. These institutions are usually on their way to a better status and their ambitious efforts should be encouraged.

The Practice of General Medicine

DR. WILLIAM A. O'BRIEN, Minneapolis: If a medical graduate desires advanced training in a specialty he has the guidance of one of the American boards to help him plan his program, but if he is undecided as to which specialty he prefers or if he wishes to become a general medical practitioner he receives conflicting advice or none at all. Recent graduates are well aware of the need for general medical practitioners, but they also realize that only a few years training separates a general medical practitioner from a specialist, and as the latter enjoys a better social and economic standing, not only in his community but also in the profession, this may be another reason for his reluctance to enter the practice of general medicine following an internship.

If the future practice of surgery and the surgical specialties is to be limited, then general medical practice will be built around a thorough knowledge of internal medicine, obstetrics, pediatrics, medical specialties and the medical aspect of the surgical specialties. In well organized hospitals all patients now must pass through the hands of an internist for a complete medical check-up before they are seen by the surgical specialists, and this is the ideal relationship between the two groups. (The practice of pediatrics is primarily internal medicine in a younger age group.)

Systems in which general medical practitioners do not have hospital privileges if they are not specialists are open to serious criticism. In our country this problem has already been met in departmentalized voluntary hospitals by placing the general medical practitioners in the medical service and giving them special privileges in the obstetric service and in the medical phases of some of the other specialties.

The training of a general medical practitioner should start in his undergraduate days. If internal medicine is the most important practical subject, then it should be given first place in the curriculum in the clinical years. The medical specialties, obstetrics and pediatrics should be second, the medical aspect of the surgical specialties should be third, while the technical aspects of surgery and the surgical specialties would be restricted to the graduate years.

Opportunities should be provided for the continued training of general medical practitioners as well as other specialists if they are to continue to benefit from well conceived and directed undergraduate and graduate training programs. The University of Minnesota has recognized three definite types of programs: (1) undergraduate, which was started sixty years ago, (2) graduate, thirty years ago and (3) continuation study, ten years ago. The program of the undergraduate and graduate years is well known, but continuation study has not received the recognition it deserves.

At Minnesota we abandoned the "refresher" approach for the practitioner ten years ago, as we recognized there was a difference between instructing undergraduate students and practitioners. There are some fields in education in which the "refresher" approach can be used as a basis for further development (mathematics) but not in medicine. Medicine, the medical specialties, obstetrics and pediatrics are ideal subjects for continuation study for general men; courses in surgery and the surgical specialties are best limited to specialists in these fields, and specialty courses can also be offered through continuation study to certified internists, obstetricians, pediatricians and other medical specialists.

Recent medical graduates who are trained either as specialists and recognized by one of the fifteen specialty boards or as general medical practitioners who are recognized by their board will enter practice in smaller communities if they have been properly trained, if they are provided with the proper facilities with which to practice and if they are given opportunities to keep abreast of developments in their field through properly arranged continuation study courses in medical centers.

DISCUSSION

ALPHONSE M. SCHWITALLA, S. J., St. Louis: This argument between specialization and general practice is affecting every one of the areas of medicine, with the possible exception of research; perhaps even there it is being affected. The whole argument is affecting even the progress of research. It is affecting education because, if we are going to prepare a general practitioner and train him, perhaps we have to reorient ourselves to the meaning of general practitioner today. At one time it was thought that the medical curriculum was nothing

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more or less than a preparation for the internship, but the internship today and the internship of ten years ago or twelve years ago is a different thing altogether. In the field of hospital practice we are again face to face with this same problem of the relations between general practice and specialization. There are hospitals that are ambitious, that ambition restricting their practice. I am talking about hospitals not under university control, where there is, to some extent, a closed staff, but even there the same problem confronts us, because there are people who have said, as some medical societies have said, that in certain areas there is no justification for a closed staff hospital, and there is a good deal to be said for that point of view. The question may be definitely raised as to whether any of our schools or any of our school hospitals have a right to a closed staff in the strict sense of the word. A good deal could be said on both sides of that argument.

DR. A. J. CARLSON, Chicago: I was impressed by this case report from northern Minnesota of Dr. O'Brien. In my experience of fifty years that kind of man can't be produced by any kind of thing, internal or external. There is something in that person from the start, and that is a bigger thing, in my judgment, than any training you give him, undergraduate or postgraduate.

DR. PAUL TITUS, Pittsburgh: I believe that better training of specialists in hospitals, where hospitals are established as educational institutions, properly established, so that they can give better training for their residents, is automatically going to give better training for their interns. Is it not equally true that, where the Council, in its wisdom, has established the limited periods of residency training, many of those will be available to men who never intend to go on with the full period of training in order to get certification, but they too will be made far better general practitioners because they did have some of these specialties? If that can be pursued, first make facilities for that sort of additional training available to these men, and then pursue the course laid out by Dr. O'Brien, groove them into the lines they should be grooved into. I definitely insist it is going to improve the standards of practice in this country. At the same time it carries out what I contend was the original contention of the boards, namely to improve the standards of the practice of medicine for the benefit of the public.

DR. WILLIAM A. O'BRIEN, Minneapolis: I think in our experience in continuation education, one of the best things we have learned is that, when the men who are highly specialized in their field instruct the general men, they not only show the general men how far they may go with safety but they also make them more critical persons in referring patients for more complicated procedures. One of the things that our specialty group likes about instructing general men is that particular feature. They work together much better afterward than before.

MEDICAL EDUCATION AND RESEARCH

Federal Aid to Medical Research

DR. KENNETH B. TURNER, New York: The possibility that federal aid to medical research, which had been inaugurated as a wartime measure, might be continued after the war received official standing in November 1944 when President Roosevelt addressed his well known letter to Dr. Vannevar Bush, director of the Office of Scientific Research and Development, asking for recommendations concerning a program of future federal aid to science.

To advise Dr. Bush, four committees were appointed, including a Medical Advisory Committee with Dr. Walter W. Palmer of New York as chairman. This committee began a three month study in January 1945. It held meetings in New York, Washington, Denver and Chicago. It conferred with representatives from seventy-three of the seventy-seven medical schools of the United States, from the services, from various research institutes, from the pharmaceutical industry and from philanthropic foundations. In addition, it received written comment and advice from hundreds of other scientists throughout the country. Based on this study a report was submitted to Dr. Bush in April.

The report recognized that government aid to medical research was necessary, stressed the importance of supporting long-term, fundamental research, advised that funds be made available as unrestricted grants, scholarships and grants-in-aid, and proposed the creation of an independent federal agency to be called the National Foundation for Medical Research.

A few days after the submission of the Bush report, two bills were introduced into the Senate, each designed to establish a national foundation for scientific research organized on the basis of a number of professional divisions with an overall authority. One bill, introduced by Senator Magnuson, was based on the Bush report; the other, by Senator Kilgore, was a rewrite of an earlier bill that had been pending. There were also a number of related bills, introduced about this time or somewhat earlier. It is the Magnuson and Kilgore bills that have received the most attention and that have caused the controversial discussion which began with the introduction of the bills and has continued to the present.

The importance of agreeing on a single bill in committee and thus avoiding the necessity of reporting two or more bills to the Senate floor has always been clearly in mind. In the past few weeks there have been conferences among Dr. Bush, Dr. Bowman, Senator Kilgore, Senator Magnuson and other interested senators in an attempt to reach an acceptable compromise measure. I am happy to be able to report that this goal was achieved at a final meeting in Washington the day before yesterday. At that time it was decided to drop both the Magnuson and the Kilgore bills and to write a new bill around the latter which will be reported out by the subcommittees under the joint sponsorship of Senator Kilgore, Senator Magnuson, Senator Saltonstall and others.

To secure agreement on this new measure it was necessary to settle a number of important controversial points: board vs. administrator as top authority; method of appointing divisional committees, definition of their functions and the creation of new divisions; inclusion of the social sciences; patents, and the mandatory apportionment of funds. One of the most difficult of these concerned the top authority. Here it seemed that the opposing views were virtually irreconcilable. The Kilgore bill had vested power in an administrator with a board acting only in an advisory capacity. This form of "straight line" organization was strongly favored by President Truman, the director of the budget and the director of war mobilization and reconversion as promoting efficiency and defining responsibility. It was strongly opposed by most scientists, who believed that one man in a position of such power was peculiarly vulnerable to political pressure, that few men were qualified for a job of such proportions and complexity and that the advisory board would become a rubber stamp. The Magnuson bill, on the other hand, had vested power in a board with the administrator appointed by and responsible to the board. The impasse has been broken by agreeing on an administrator as the top authority but with the safeguard that, before appointing him, the President shall consult with and receive the recommendations of the board, which will be composed of nine presidentially appointed members plus the chairman of the divisional scientific committees. Furthermore the board is to have its own full time administrative staff, including an executive secretary, and is to be required to submit to the President and the Congress an independent report annually or at shorter intervals.

This is a satisfactory and workable compromise. The straight line type of organization is maintained, but there is also a strong board which has a hand in the selection of the administrator and which can act as a watchdog over the affairs of the foundation.

Second in importance only to the advisory board are the divisional committees. It is now agreed that the selection and appointment of scientists to these committees shall be made by the administrator but only with the advice and approval of the

board. The functions of the divisions are to be defined by the administrator and new divisions created by him also only after receiving the advice of the board.

When we have secured the passage of the bill, we must maintain unceasing vigilance to insure the appointment of the ablest citizens to the advisory board and the ablest scientists to the professional committees, and to insure further that the principles so ably set forth in the Bush report govern the conduct of the foundation. Whether we like it or not, with federal aid to medical research, medicine is in politics.

Research in Undergraduate Medical Education

DETLEV W. BRONK, PH.D., Philadelphia: The abstract of this paper has not been obtained.

Protection of Animal Experimentation

DR. A. J. CARLSON, Chicago: Antivivisection bills are pending in Congress and in the legislatures of New York, Massachusetts, Maryland and other states. Another bill has just been introduced in the New York state legislature at Albany. This second bill puts scientific experiments on dogs under the authority of the state health department. The health department may license medical students and medical and biologic investigators to conduct such experiments on payment of an annual license fee of $1,000 and posting of a bond of $5,000. How, if such experiments are cruel and futile, will licensing by the state health department make them any less cruel and futile? And what about the state of New York charging medical students and medical and biologic investigators an annual license fee of $1,000 for doing their best to advance medicine and biology? To me it does not make sense.

The moral code of civilized man reads thus: As between man and animals, man comes first. This is the law of life. But when man uses or destroys animals for man's own protection, aid and other needs, such use must be conducted without cruelty. Certainly it cannot be immoral to use animals humanely to mitigate human suffering due to disease, as long as we believe animals may be sacrificed for human food and clothing. If man is not worth more than the dog, then our efforts to improve man is an error.

We use animals, by common consent, for food, for clothing, for labor, for pleasure. How can it be wrong to use animals humanely to increase our understanding of life, our control of disease, both of which contribute to human happiness? We must retain a sense of proportion.

Obviously in some studies, such as those in nutrition, metabolism, kidney disease, stomach ulcer, cancer and pneumonia, anesthesia is not and cannot be used. The animals suffer some discomfort but never more and probably less than a human being afflicted with such diseases. The results of such studies are among those which are most immediately applicable to the mitigation of diseases in man and animals.

Our efforts toward prevention and control of infantile paralysis would be hopeless except for the use of some species of monkeys and rodents in detecting and following the poliomyelitis virus. And yet the Antivivisection League of Los Angeles publicly proclaims that "it does not support the March of Dimes campaign."

There were more than thirty years of intensive research on animals—mainly on the dog—before we had the substance insulin in sufficient purity to warrant its trial on persons sick with diabetes.

The lowly mouse, not to mention many other species, has served man well in research on cancer. Animal experimentation has been a great factor also in giving us better knowledge and control of anemia, digestive and kidney disorders, glandular disturbances, nervous diseases, hookworm, scurvy, pellagra and malaria.

GENERAL DISCUSSION

DR. EWEN MACEWEN, Iowa City: I have gone on record as favoring the Magnuson bill, not because I considered it the ideal bill but, as Dr. Turner has so well shown, the least unsatisfactory. We weren't in favor of this federal research because, as he has so well stated, certain conditions have changed our prewar vision. First, let me say, the gap which has taken place in the oncoming crop of scientists was due to draft necessity. When one considers that of every hundred children that enter the fifth grade, only about forty-two graduate from the eighth grade and about 7 per cent finish college, and a small group of these ultimately go on to research, we realize how slow it is going to be to fill up this gap that has occurred during the past five years. On the other hand, I realize that during the next few years, unless most of us are mistaken, there is going to be a tremendous drive, an international drive for scientific supremacy. Certainly if we are to keep up with nations that are in competition, we need more funds than we did before the war. Hence the only way is to get it through a federal research foundation, because I can see no hope at the state level or through local finances.

DR. JOSEPH C. HINSEY, New York: The situation in New York is really an acute one. If we had not prepared for the present campaign we would be in a bad position. As a result of the activities of the state and county medical societies—and I may say they have been active—the Friends of Medical Research, the medical institutions of the state, the health department, excellent publicity has been obtained. The state medical society has published a new bulletin which has been sent out to editors and to various members throughout the state. This has been of great help in keeping up the progress of the campaign. From organizations like the public health council, the state dental society, the state veterinary medical society and the Greater New York Hospital Association resolutions have gone to Albany not only from the organizations but from the membership. The New York State pharmaceutical organization is placing literature in the hands of every druggist in the state. The State Charities Aid Association has sent a special bulletin to sixty-two local county tuberculosis and health associations, warning of the danger of the law. The medical students over the state have been working industriously not only among themselves but among people outside. Publicity has come from the finest papers in the state, the large papers in New York, with the exception of the Hearst press, the papers upstate and in the little local communities. The beauty of the publicity has been that it has been excellently conducted. Furthermore, it has encouraged people to write to Albany in protest of this bill. Just to see how far our plans have gone, last week in New York an award was made at the American Museum, the Whipple Award sponsored by the American Museum of Natural History—the Friends of Medical Research. It was an award given to two of Dr. Whipple's dogs for their contribution to medical research. This was beautifully dramatized in the papers of New York, with pictures, and had a real effect in certain quarters. These dogs, Josie and Trixie, are descendants of the first dogs on which Dr. Whipple did his work, starting in California. Some people would argue that this problem can be met only on a local basis. I am convinced that there is something much broader and more important and something that needs to be dealt with on a national basis. I visualize that one of the main functions of a national commission of the type Dr. Carlson has described is the development of better public relations and stressing the role that animal experimentation has played and will play in the progress of medical science. We need an organization to do this on a national scale. Furthermore, we need an organization to coordinate the activities of the local organizations.

DR. CHARLES GORDON HEYD, New York: I should like to reenforce the remarks of Dr. Hinsey. All agitation and all bills against experiments on animals are a continuing and direct attack on the practice of scientific advancement of medicine. It is no fight for the duration; it is a continuous and never ending battle against the darkness, emotionalism and fanaticism that is inherent in human beings. The opponents of animal experimentation are organized, backed by large sums of money and with an adequate if not too truthful press. Therefore it is incumbent on all scientific bodies, not only medicine, to create a national organization that shall be the controlling influence, that will be the general staff from now on to the indefinite

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future, to oppose and to contest with these groups the imposition of legislative slavery on the expansion of human research. The meeting that Dr. Hinsey referred to comprised every variety of individual associated with any of the disciplines in the sciences. They organized spontaneously a group called the Friends of Medical Research. The public relations department of the state society came into action, as did the sixty-eight constituent county societies of the medical society of the state. They appointed an activated and organizing committee. Funds were solicited. The funds were forthcoming adequately and promptly. I am delegated by the Academy of Medicine and the Medical Society of the State of New York to tell Dr. Carlson that all the funds that we have collected, after our expenses are paid, are going to be given to his national organization; that this equipment can be boxed and sent to any state or territory in the United States and brought into action; that our forms for these thousands and hundreds of thousands of pieces of literature are at the disposal of the national group; that we do not wish New York State to set up any organization that has any national implications. We want a separate body that shall be national in scope, with a central office, with expert people, so that every statement is incontestable and incontrovertible. We want a group represented by Dr. Carlson to implement this national picture. What we have developed in technics and which has been significantly successful we bring publicly here and make an offering of our appreciation for the efforts of Dr. Carlson and his group and present it to him with the compliments of people who feelingly in New York State are prepared to go any distance that medical research, scientific research, shall not pass and perish from our country.

DR. E. I. EVANS, Richmond, Va.: One point that seems to me very important, and that we are forgetting continually, is this matter of the elements of observation. If ever there was a need for some real learning of principles it is to develop this matter of observation in clinical teaching. Unfortunately, it is getting to be my impression in clinical matters that very few people who look at clinical facts or patients see anything. It would seem to me that one of the real things we could do for students—I think it could be used as a research tool in undergraduate teaching—would be re-search; it won't be research simply to teach a young student to look at patients and decide from seeing certain facts.

DR. JOHN B. TRUSLOW, Washington, D. C.: During the last six months two groups of our society, government and science, who have traditionally regarded each other with a mixture of awe and fear and compensatory belittlement, learned enough of each other's language and became sufficiently convinced of each other's integrity and sincerity that today we have a bill admitted by both legislators and Congressmen and scientists to be a great improvement over either of the bills which originally embodied their respective positions. These six months have been tough. The two groups at times were poles apart. Each group conducted its thinking and activities at times as though the other group was not only unimportant to the passage of the bill but a menace to progress, democracy and the sacred traditions of science. The important thing, therefore, is not only the production of this excellent bill but also the proof and, for medical legislation, the precedent, in my opinion, that national legislation can be written, as it always should be written, with a lot of thought, a lot of misunderstanding turning into understanding, a lot of education on both sides.

A. S. HARRIS, PH.D., Cleveland: I want to endorse what the last speaker just said about the National Science Foundation. I think that we who are friends of animal experimentation shouldn't talk too much of defense and protection but, rather, take a more positive attitude and speak of advancement or promotion of science by animal experimentation. We have to put on our educational program he talked about and for which he has pointed the way. It isn't a matter of hammer and tong, I hope, but of real education and largely by interesting stories that can be written about the drama of science and as it has developed.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Board in Specialties were published in THE JOURNAL, April 27, page 1263.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, Jan. 21-23. Sec., Dr. B. F. Austin, 519 Dexter Ave., Montgomery 4.

ARIZONA: * *Examination.* Phoenix, April 2-3. *Endorsement.* Phoenix, April 6. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

ARKANSAS: * *Medical.* Little Rock, June 6-7. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 6. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

CONNECTICUT: * *Medical.* Hartford, July 9-10. Sec. to the Board, Dr. Creighton Barker, P. O. Box 1438, New Haven. *HOMeopathic.* Derby, July 9-10. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven.

DISTRICT OF COLUMBIA: * *Reciprocity.* Washington, June 10. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

FLORIDA: * Jacksonville, June 24-25. Sec., Dr. Harold D. Van Schaick, 2736 S.W. Seventh Ave., Miami 36.

HAWAII: Honolulu, July 8-11. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

IDAHO: Boise, July 9. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

KANSAS: *Reciprocity.* Topeka, June 6. Sec., Board of Medical Registration & Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City 10.

MAINE: Augusta, July 2-3. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: *Homeopathic.* Baltimore, June 18-19. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore. *Medical.* Baltimore, Dec. 10-13. Sec., Dr. J. T. O'Mara, 1215 Cathedral St., Baltimore.

MASSACHUSETTS: Boston, July 9-12. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston 33.

MICHIGAN: * Lansing, Oct. 9-11. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

MISSISSIPPI: June. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson 113.

NEVADA: Carson City, May 6. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 24-27. Sec., Dr. Jacob L. Lochner, Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, July 2-5. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Endorsement.* May 7. Sec., State Medical Board, Dr. H. M. Platter, 21 W. Broad St., Columbus.

OREGON: * Special Examination May 22-24. Final date for filing application is May 8. *Examination.* Portland, July 24-26, Exec. Sec., Miss Lorienne M. Conlee, 608 Failing Bldg., Portland 4.

SOUTH CAROLINA: Columbia, June 24-26. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

SOUTH DAKOTA: * Pierre, July 16-17. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

TEXAS: Dallas, June 11-13. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

WASHINGTON: * Seattle, July 11-12. Sec., Department of Licenses, Miss Nell Adams, Olympia.

WISCONSIN: * June 25-27. Sec., Dr. C. A. Dawson, River Falls.

WYOMING: Cheyenne, June 3-4. Sec., Dr. G. M. Anderson, Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

COLORADO: Denver, June 5-6. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

CONNECTICUT: June 8. Address State Board of Healing Arts, 250 Church St., New Haven 10.

FLORIDA: Gainesville, June 4. Final date for filing application is May 20. Sec. Dr. J. F. Conn, John B. Stetson University, DeLand.

MICHIGAN: Ann Arbor and Detroit, May 10-11. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

NEBRASKA: Omaha, May 7-8. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

OREGON: Portland, July 6. Sec., Mr. C. D. Byrne, Univ. of Oregon, Eugene.

SOUTH DAKOTA: Probably Aberdeen, June 7-8. Sec., Dr. G. M. Evans, Yankton.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Workmen's Compensation Acts: Evidence Held Sufficient to Show That Death Caused by Tetanus Arose Out of the Deceased's Employment.—The plaintiff employer filed this action to set aside an award of the Industrial Commission. From a judgment affirming the award, the plaintiff appealed to the Supreme Court of Wisconsin.

Quandt died of tetanus infection following an onset which started two and one-half days previous to his death. An autopsy disclosed an abrasion on the tip of one finger of his right hand which had apparently healed. The widow testified that the deceased dressed this abrasion several times just prior to his death and that it was an ugly jab caused by the slipping of a drill while he was remodeling a butcher shop about two weeks before he died. In the course of his job he had to handle old lumber, animals were butchered in the room in which he worked, and there were hides in the same room which he had to move out of his way. There was medical evidence that tetanus occurs frequently in the vicinity of animals, that manure is especially likely to contain tetanus germs, that unless the animals are kept clean the outside of the hides is apt to be so infested and that dirt is a frequent source of tetanus infection. The evidence was sufficient, therefore, to warrant a finding that the repair job engaged in by deceased involved exposure to tetanus infection. The wound on the deceased's finger showed no sign of local irritation or infection at the time of his death, but the medical evidence was to the effect that this was not decisive in cases of tetanus. On the basis of the medical testimony, the court said that while some people have tetanus germs within their bodies, particularly their intestinal tracts, and it is possible for the germs to cause a tetanus lesion without an outside wound, nevertheless the probability is the other way and a wound is the most likely place for the germs to enter. The history of this case, concluded the court, indicates the injured finger as the portal of infection and the hides as the source of the tetanus germs. The plaintiff's objection that the commission resorted to standard medical textbooks to form and justify its conclusions as to the nature and likelihood of idiopathic tetanus was held to be immaterial. We are hardly in a position, said the Supreme Court, to supervise the acquisition or use by the commission of expert learning in the various fields which call for administrative action on its part. Accordingly the award was sustained and the judgment in favor of the defendant affirmed.—*Gmeiner & Grearson et al. v. Industrial Commission et al., 20 N. W. (2d) 543 (Wis., 1945).*

Drunkenness: Results of Chemical Tests of Blood Taken from Unconscious Person—Use During Trial—Self Incrimination.—The defendant was convicted of manslaughter on a charge of operating a motor vehicle on a public highway while under the influence of intoxicating liquor. From such conviction he appealed to the Supreme Court of Oregon.

After the accident out of which the charge of manslaughter against the defendant arose, the defendant remained unconscious for a period of about forty-eight hours. While unconscious he was arrested and taken into custody by a state police officer and treated for his injuries by Dr. Manning. At the request of the police officer, Dr. Manning was induced to extract a sample of blood from the defendant for the purpose of having it analyzed to determine its alcoholic content. This blood sample was taken by the officer to a physician in Portland, Ore., for analysis. At the hearing the Portland physician testified that the sample "contained 260 milligrams of alcohol per one hundred cc's." The admission in evidence of this testimony was objected to primarily on the ground that the use of such testimony was a violation of the constitutional provision that no person shall be compelled in any criminal prosecution to testify against himself and that such testimony is to be taken as an admission or confession or as evidence of a physical examination.

The only question before us for decision, said the Supreme Court, is whether the compulsory taking of the blood sample from the defendant and the admission of testimony disclosing its alcoholic content was a denial to the defendant of his constitutional privilege against self incrimination. The protection from "testifying," from "furnishing evidence" or from "being a witness" was provided in order to place beyond the reach of ordinary legislative alteration the privilege against self incrimination. Assuredly, the object of this protection is the employment of legal process to extract from the person's own lips an admission of his guilt which will thus take the place of other evidence. In other words, it is not merely any and every compulsion, but testimonial compulsion, that is the kernel of the privilege. If the arrest of a prisoner is lawful, the officer making the arrest may search the person of the prisoner and take from him not only the instruments of the crime but also such articles as may be of use as evidence on the trial. For purposes of identification, an accused may be required to do many things without having his constitutional rights against self incrimination invaded. Accordingly, a defendant may be required to stand up in court, to put on a blouse to see if it fits, to place a handkerchief over his face, to stand up and remove his glasses, to remove his shirt and coat and permit the jury to see scars on his body and to don a shirt introduced in evidence, and to exhibit his arm so as to reveal tattoo marks thereon, which a previous witness has sworn were there. He may also be fingerprinted, photographed and measured under the Bertillon system.

In the case at bar it was conceded that the defendant was in custody and under lawful arrest at the time the blood sample was extracted from his veins and that he was unconscious at the time. However, prior to the trial both the defendant and his attorney were advised by the district attorney that the blood sample had been taken. No motion was made for its return or suppression. At the trial no objection was made to the admission of testimony as to the extraction of blood or the analysis thereof on the ground that the Oregon constitution prohibiting unreasonable search or seizure had been violated. In fact, counsel for defendant stated on oral argument that he was not urging that the blood sample had been seized in contravention of the search and seizure provision. In *State* v. *Gatton*, 60 Ohio App. 192, 20 N. E. (2d) 265, the court observed that such evidence was not required to be given by the defendant himself but was given by the deputy sheriff and by the doctor called to make the examination. "We are unable," said that court, "to observe any merit in the defendant's claim that the introduction of such evidence violated his constitutional rights, and we believe, and hold, that the constitutional inhibition against self crimination relates only, as stated by Greenleaf, to disclosure by utterance. No such disclosure was required of defendant in this case."

The defendant was not deprived of any of his constitutional rights by the admission of the testimony here in question, said the Supreme Court. He was not compelled to testify against himself. Evidence of the result of the analysis of the blood sample was not his testimony but that of Dr. Beeman. The blood sample was obtained without the use of any process against him as a witness. He was not required to establish the authenticity, identity or origin of the blood; those facts were proved by other witnesses. If the evidence here under attack is inadmissible, said the court, it is difficult to understand under what theory fingerprints procured under compulsion, or evidence concerning them, is admissible. It is equally difficult to comprehend why a defendant is not denied his constitutional privilege against self incrimination by being required to do the many other acts previously referred to. In holding that the testimony concerning the blood sample was admissible, the court concluded, we are not deciding that an accused can be forced to undergo a physical examination or to submit to a blood test. The question of unlawful search and seizure is not involved. Moreover, the defendant was under arrest at the time the blood sample was taken. Accordingly the admission of the evidence in question was held to be proper and the defendant's conviction was affirmed.—*State v. Cram, 160 P. (2d) 283 (Ore., 1945).*

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Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Clinical Pathology, Baltimore

15:489-554 (Nov.) 1945

Malarial Pigment: Consideration of Mechanism of Elimination from Duck. R. H. Rigdon.—p. 489.
Malaria Transmitted by Bank Blood Transfusion: Report of 2 Cases. J. G. Sharnoff, J. Geiger and I. Selzer.—p. 494.
Improved Method of Examination of Feces for Diagnosis of Intestinal Schistosomiasis. T. H. Weller and G. J. Dammin.—p. 496.
Canine Histoplasmosis: Pathologic Study of 3 Reported Cases and First Case Found in the Canal Zone. W. J. Tomlinson and R. G. Grocott. —p. 501.
*Acute Infectious Lymphocytosis. R. F. Birge and L. F. Hill.—p. 508.
Specific Types of Alpha Streptococci and Streptococcal Antigen in Unpotable Water and Water Supplies. E. C. Rosenow.—p. 513.
Relationship of So-Called "Giant Cell Tumor" to Frontal Bone: Report of Case. Elizabeth Ferrington and J. A. Mufson.—p. 529.
Liver Abscess Due to Friendländer's Bacillus (K. Pneumoniae) Complicating Adenocarcinoma of Ampulla of Vater. J. K. Norman and C. H. Binford.—p. 534.

Acute Infectious Lymphocytosis.—Birge and Hill report the occurrence of acute infectious lymphocytosis in a girl aged 4. This disease of children, named by Smith in 1941 acute infectious lymphocytosis, is characterized by pronounced absolute lymphocytosis of three to nine weeks' duration. Often it occurs without clinical signs or symptoms. Occasionally it is accompanied by slight fever, symptoms of upper respiratory infection, abdominal pain of short duration or signs of meningeal irritation with slight pleocytosis. The cause is not known. The prognosis is favorable. The disease is communicable and occurs in all seasons. It seems to be a specific entity and differs from infectious mononucleosis in many respects. Lymphadenopathy and splenomegaly are not encountered; lymphocyte counts are higher; lymphocytes are normal in appearance; the heterophile antibody test is negative. Bone marrow obtained from another recently studied case showed slight increase in small lymphocytes without other changes.

American Journal of Hygiene, Baltimore

43:1-90 (Jan.) 1946

Bat Malaria. R. D. Manwell.—p. 1.
Studies on Mosquitoes of Genus Hemagogus in Colombia (Diptera, Culicidae). H. W. Kumm, E. Osorno-Mesa and J. Boshell-Manrique. —p. 13.
Periodicity of Influenza. Commission on Acute Respiratory Disease. —p. 29.
Studies on Specificity of Intradermal Tests in Diagnosis of Filariasis. D. L. Augustine and Camille Lherisson.—p. 38.
Effect of Immunization Against Lactobacilli and Acidogenic Cocci on Tooth Flora of Rat. Elizabeth I. Parsons, E. V. McCollum and M. Frobisher Jr.—p. 41.
Epidemiologic and Experimental Observations of Poliomyelitis in New York City (1943-1944). C. W. Jungeblut and G. Dalldorf.—p. 49.
*Effect of Double Bunking in Barracks on Incidence of Respiratory Disease. Commission on Acute Respiratory Disease.—p. 65.
Differences Among Strains of Poliomyelitis Virus in Macaca Mulatta. J. F. Kessel, F. J. Moore and C. F. Pait.—p. 82.

Double Bunking in Barracks and Respiratory Disease.—According to the Commission on Acute Respiratory Diseases there are theoretical reasons for believing that double bunking without concomitant crowding may be a desirable method of quartering troops. The procedure provides more available floor space for the men during off-duty hours and results in a greater separation between the men while sleeping. If acute respiratory diseases are acquired largely in the barracks and if direct droplet spread is an important factor in transmission of infection, it might reasonably be expected that double bunking would reduce the frequency of close contact and thereby result in a lowering of the incidence of disease. If, however, either droplet nuclei or contaminated dust particles are the dominant factors, double bunking could not be expected to have an effect since the total cubic feet of air space available per man remains unchanged. During an epidemic of acute undifferentiated respiratory disease significantly lower incidence rates were observed among men living in barracks equipped with double bunks than in control barracks. There appears to be no objection to the general use of double bunks, provided overcrowding is avoided.

American J. Obstetrics and Gynecology, St. Louis

51:1-150 (Jan.) 1946

Carcinoma Subsequent to Radiotherapeutic Menopause. J. A. Corscaden, J. W. Fertig and S. B. Gusberg.—p. 1.
Value of Physiologic Substrates in Sperm Migration in Selected Cases of Human Infertility: Observations on a Series of 106 Patients. S. L. Siegler.—p. 13.
*Postmenopausal Endometrium and Its Relation to Adenocarcinoma of Corpus Uteri: Study of 236 Cases. G. T. R. Fahlund and A. C. Broders.—p. 22.
Anovulatory Cycle and Menstruation. R. Meyer.—p. 39.
Selective Treatment of Antepartum Hemorrhage. W. A. Scott.—p. 48.
Histologic Study of Effect of Irradiation on Adenocarcinoma of Endometrium. L. M. Stowe.—p. 57.
Management and Treatment of Late Toxemias of Pregnancy. S. A. Cosgrove and L. C. Chesley.—p. 67.
Oral Therapy with Ethinyl Estradiol in the Menopause. H. Wiesbader and W. Filler.—p. 75.
Pyridoxine Failure in Nausea and Vomiting of Pregnancy. H. C. Hesseltine.—p. 82.
*Sulfathiazole in Control of Epidemic Diarrhea of Newborn. M. Leff. —p. 87.
Sulfanilamide and Sulfathiazole Absorption via Rectum and Vagina: Further Studies. G. L. Carrington and M. A. Hannah.—p. 90.
Are Antihormones Formed During Pregnancy? J. H. Leathem and A. E. Rakoff.—p. 97.
Ethinyl Estradiol in Treatment of Metrorrhagia. W. Bickers.—p. 100.
Puerperal Sterilization. R. Van Dyck Knight.—p. 104.
Panhysterectomy Without Vaginal Cleansing. T. Cianfrani and J. H. Zeigerman.—p. 109.
Cesarean Section on Poliomyelitic Patient Confined to Respirator. H. Strauss and S. S. Bluestone.—p. 114.
Double Uterus and Double Vagina: Identical Doubles Demonstrated by Colpohysterosalpingography. R. R. Killinger and H. B. McEuen. —p. 121.
Subperitoneal Baldy-Webster Uterine Suspension. M. L. McCall and E. A. Schumann.—p. 125.

Postmenopausal Endometrium and Adenocarcinoma.—The material studied by Fahlund and Broders consisted of gross and microscopic specimens of postmenopausal uteri, detailed descriptions of specimens and clinical and operative records of 236 cases of the Mayo Clinic. The 236 cases included 86 cases in which the uterus had been removed because of adenocarcinoma, 100 cases in which the uterus had been removed for other reasons and 50 cases in which routine necropsy had been performed. In the 86 women with adenocarcinoma of the corpus uteri, all but 1 had vaginal bleeding or spotting as a presenting complaint. There was no appreciable difference in the percentage of cases of any given type of endometrium in adenocarcinomatous uteri as compared with nonadenocarcinomatous uteri except with regard to atrophic endometrium. Thus 41.8 per cent of cases of uteri with cancer showed atrophic endometrium and only 16 per cent of cases of uteri without cancer showed atrophic endometrium. This suggests that adenocarcinoma of the uterine corpus is more likely to occur in cases in which there is atrophy of the endometrium than in cases in which there is no atrophy. The percentage of cases with grade 3 and 4 cystic change and with grade 3 and 4 accumulation of secretion was roughly the same in the two groups of cases. Approximately 42 per cent of adenocarcinomatous uteri showed no cystic changes, whereas 20 per cent of nonadenocarcinomatous uteri showed no cystic changes. This lends evidence contrary to the view that the "Swiss cheese endometrium" of Novak has features predisposing to the development of carcinoma. Subbasal glands seem to have no causal relationship to adenocarcinoma of the uterus. There was virtually no difference in average thickness of the endometrium in adenocarcinomatous uteri as compared with nonadenocarcinomatous uteri. The incidence of endometrial polypi in uteri without adenocarcinoma was roughly eight times greater than their incidence in uteri containing adenocarcinoma. However, previous curettage in

all cases of cancer might be partially responsible for the variation. The general conclusion from this comparison is that atrophic endometrium was found more often in adenocarcinomatous uteri than in nonadenocarcinomatous uteri, while endometrial polypi were found more often in nonadenocarcinomatous uteri.

Sulfathiazole in Epidemic Diarrhea of the Newborn.—Leff describes the procedure employed at the Central Maternity Hospital in New York for the treatment of epidemic diarrhea of the newborn. Nurses are instructed to be constantly on the alert for frequent or watery stools in the newborn. Treatment is instituted early and consists of ½ grain (0.06 Gm.) of sulfathiazole every three hours administered with a medicine dropper or teaspoon directly into the baby's mouth (a stock solution of 0.06 Gm. per 4 cc. is used). After a few doses the diarrhea is usually controlled. If the diarrhea does not subside, all food is withheld for twelve hours, and saline solution is given by clysis and the medication is continued. Every baby in the nursery who has been exposed is given 1 grain of sulfathiazole as a prophylactic measure. Sulfathiazole given promptly at the onset of epidemic diarrhea in the newborn infant cures the disease in less than twenty-four hours and prevents its spread in the newborn nursery.

Annals of Allergy, Minneapolis

3:401-478 (Nov.-Dec.) 1945

Extraction of Nitrogenous Matter from Pollens. R. F. E. Stier, A. L. McNeil and J. Ernsdorff.—p. 401.
Fatigue and Weakness of Allergic Origin (Allergic Toxemia) to Be Differentiated from "Nervous Fatigue" or Neurasthenia. T. G. Randolph.—p. 418.
Introduction of Allergen into Skin by Inunction with "Intraderm": I. Additional Experimental Data on Inunction Test. F. Herrmann.—p. 431.
Passive Transfer of Experimental Contact Dermatitis with Urbach-Koenigstein Technic. L. H. Ballestero and A. Manrique Mom.—p. 435.
*Parenteral Use of Dihydroergotamine in Migraine. M. M. Hartman.—p. 440.
Successful Therapy of Dermatologic Syndrome with L. Casei Factor (Folic Acid): Preliminary Report. A. F. Coca.—p. 443.
Sinobronchial Syndrome Complicating Atopic Asthma in Children: Treatment by Roentgen Ray. L. O. Dutton and J. R. Fuchlow.—p. 447.
Combined Tyrothrycin-Penicillin Therapy in Contact Dermatitis. M. Vaisberg.—p. 451.

Dihydroergotamine in Migraine.—Hartman selected 20 patients with migraine for trial. Seventeen of them had obtained relief from ergotamine tartrate and 3 had not. These same 17 obtained relief by dihydroergotamine, which did not cause uterine cramps in any of the 15 female patients, 1 of whom was pregnant and 3 of whom were menstruating. Only 1 of the 20 patients suffered nausea ascribable to the dihydroergotamine. Nine had nausea ascribable to ergotamine tartrate. Dihydroergotamine used intramuscularly produced no demonstrable effects on pulse rate, blood pressure, pulsations of radial, dorsalis pedis and posterior tibial arteries or the temperature and color of the extremities.

Blood, New York

1:1-98 (Jan.) 1946

Blood: Brief Survey of Its Chemical Components and of Their Natural Functions and Clinical Uses. E. J. Cohn.—p. 3.
*Primary Congenital and Secondary Acquired Splenic Panhematopenia. C. A. Doan and C. S. Wright.—p. 10.
Megakaryocytes in Idiopathic Thrombocytopenic Purpura, a Form of Hypersplenism. W. Dameshek and E. B. Miller.—p. 27.
Value of Penicillin in Treatment of Agranulocytosis Caused by Thiouracil. Mary Catherin Tyson, P. Vogel and N. Rosenthal.—p. 53.
*Differentiation of Pernicious Anemia and Certain Other Macrocytic Anemias by Distribution of Red Blood Cell Diameters. G. A. Daland, C. W. Heath and G. R. Minot.—p. 67.
Diagnosis of Hodgkin's Disease by Aspiration Biopsy. Lucile Loseke and L. F. Craver.—p. 76.

Splenic Panhematopenia.—Doan and Wright observed in certain general constitutional disease states involving the spleen more extensively than other organs an instability in the functional balance of the spleen, which in extreme instances resulted in an absolute lack of discrimination between senile and mature circulating elements, with excessive phagocytosis of all essential cells passing through this organ. They report 3 cases: 1. A girl aged 14, with congenital splenic panhematopenia, experienced excessive splenic sequestration of normal circulating blood elements, which had probably commenced a few weeks after birth and had persisted until splenectomy at 14 years of age. Almost complete cellular and physical reequilibration followed the operation immediately and has been maintained for two years. 2. The second case demonstrates that splenic panhematopenia may occur as a relatively acute fulminant medical crisis. 3. A woman with Gaucher's disease is an example of the indiscriminate sequestration of all circulating cellular elements by a spleen, enlarged and engorged secondary to a generalized constitutional disease.

Differentiation of Anemias by Distribution of Red Blood Cell Diameters.—Deland and his associates studied 35 cases of pernicious anemia, 17 of refractory macrocytic anemia, 33 of macrocytic anemia secondary to a variety of causes and 10 normal persons. The authors conclude that below the level of about 2,500,000 red blood cells per cubic millimeter the degree of anisocytosis as revealed by the standard deviation and the coefficient of variation of the red cell diameters serves as a fairly accurate criterion for distinguishing addisonian pernicious anemia from many other types of macrocytic anemia. Below the level of 3,000,000 red blood cells per cubic millimeter the asymmetrical skewness of the distribution curve of the red cell diameters in pernicious anemia is an aid in distinguishing these cases from certain other types of macrocytic anemia.

California and Western Medicine, San Francisco

64:1-62 (Jan.) 1946

Sickness Insurance in Relation to California Medical Association. J. Cline.—p. 7.
The Army Doctor. R. V. Lee.—p. 9.
Comparative Pathology of Native Chinese and Americans: Some Observations. C. L. Dale.—p. 13.
Crushing Injuries with Renal Failure. W. Birnbaum.—p. 15.
Phlebothrombosis, Thrombophlebitis and Pulmonary Embolism—present Concepts. L. J. Kleinsasser.—p. 18.
X-Ray Examination of Chest in County Hospital: Routine Examinations in County Hospital in California. H. Bauer, H. R. Goldsmith and A. B. Steele.—p. 29.
Sjögren's Syndrome Treated with Stilbesterol: Report of Case. B. Friedman and H. Gernand.—p. 31.

Endocrinology, Springfield, Ill.

37:389-496 (Dec.) 1945

Experimental Production of Exophthalmos in Fundulus by Means of Anterior Pituitary Extracts. A. Albert.—p. 389.
Interruption of Ovulation in Hen by Subcutaneously Administered Nonspecific Substances. R. M. Fraps and B. H. Ncher.—p. 407.
Relation Between Ovulation Frequency and Incidence of Follicular Atresia Following Surgical Operations in Domestic Hen. I. Rothchild and R. M. Fraps.—p. 415.
Succinic Dehydrogenase Activity of Ovarian and Lutein Tissue. R. K. Meyer, W. H. McShan and Wilma F. Erway.—p. 431.
Influence of Urinary Cortin-like Material on Sodium and Potassium Metabolism. Mary L. Feil and R. I. Dorfman.—p. 437.
*Relation of Carbohydrate Deficient Diets to Effectiveness of Hormones of Adrenal Cortex. W. J. Eversole.—p. 450.
*Further Studies on Chemical Nature of Compounds Which Inhibit Function of Thyroid Gland. E. B. Astwood, A. Bissell and A. M. Hughes.—p. 456.

Carbohydrate Deficient Diets and Effectiveness of Hormones of Adrenal Cortex.—Eversole states that a low carbohydrate diet greatly reduces the effectiveness of desoxycorticosterone acetate, less so than it does whole extract of the adrenal cortex. This was demonstrated in treated adrenalectomized rats fed carbohydrate deficient diets for periods of ten and twenty days. The effectiveness of the preparations was partially dependent on the method of administration. Cortical extract 0.5 cc. was more effective in the drinking water than when injected thrice daily and much more effective than when injected once daily. Desoxycorticosterone acetate 0.5 mg. was more effective when injected in an alcohol-water suspension than in oil, but regardless of the method of administration it was inferior to cortical extract given in drinking water. A possible explanation of these results is the conversion of fed protein to carbohydrate under the influence of adrenal cortex hormones.

Chemical Nature of Compounds Which Inhibit Thyroid Functions.—Astwood and his associates investigated the relative antithyroid activities of a variety of compounds in rats by administering various doses in the diet for periods of ten days.

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The degree of thyroid enlargement and the decrease in thyroid iodine concentration thus induced were used to compare the activities of new compounds with thiouracil, which was considered to have an activity of 1. Of the 220 substances investigated, 115 were found to possess detectable activity and 25 proved to be as active as or more active than thiouracil. The most potent substances were derivatives of thiouracil. Two types of chemical structure were found to be associated with antithyroid activity. The more active class possessed a thiocarbonamide grouping, the less active an aminobenzene group. Of the latter the most effective substances were 4.4'-diaminodiphenylmethane, its tetramethyl derivative and 2-amino-5-sulfanilylthiazole. These were approximately one fourth as active as thiouracil.

Gastroenterology, Baltimore

5:449-556 (Dec.) 1945

*Transmission of Infectious Hepatitis by Blood Transfusion: Report of 2 Cases. H. M. Murphy.—p. 449.
Prophylaxis of Peptic Ulcer. A. Winkelstein.—p. 457.
The Pancreas: Contributions of Clinical Interest Made in 1944. R. Elman and M. D. Hatch.—p. 463.
Tuberculosis of Stomach, with Special Reference to Its Incidence in Children. I. Binder, V. M. Ruby and B. J. Shuman.—p. 474.
Methyl Group and Some of Its Relations to Liver and Kidney Damage. Mary Adelia Bennett.—p. 491.
Action of Vitamin D2 on Experimental Peptic Ulcer Produced by Cinchophen. J. Nasio.—p. 496.
Pepsin Method: Role of Dilution in Determination of Peptic Activity. G. R. Bucher, M. I. Grossman and A. C. Ivy.—p. 501.
Effect of Alumina Gel on Absorption of Vitamin A from Intestinal Tract. W. S. Hoffman and Hattie A. Dyniewicz.—p. 512.

Transmission of Infectious Hepatitis by Blood Transfusion.—Murphy reports the accidental transfusion of 2 patients with blood containing the virus of infectious hepatitis and the subsequent reproduction of the disease in the recipients. The blood was drawn from the donors and given to the recipients shortly before the donors developed hepatitis. The incubation period in the recipients from the time of transfusion to the onset of illness was twenty-four days and forty-seven days respectively. Infectious hepatitis is probably transmitted by transfusion of blood or plasma much more frequently than is realized. It appears impossible to prevent such occurrences in military personnel in overseas areas where hepatitis is epidemic and transfusions are used frequently. Persons with a history of hepatitis should not be used as blood donors.

Illinois Medical Journal, Chicago

88:273-322 (Dec.) 1945

Compound Fractures: First Priority Emergency; Plea for Adequate Plan for Definitive Treatment. E. L. Compere.—p. 289.
Medical Care for Veterans. P. R. Hawley.—p. 294.
Thrombosis of Deep Veins of Lower Extremities. D. I. Abramson.—p. 296.
Ganser's Syndrome: Case Study. A. A. Lieberman.—p. 302.
Action of Shock Therapy in Light of Clinical Observation. B. Kovitz.—p. 306.

89:1-84 (Jan.) 1946

*Paraurethral and Periurethral Infections of Female Urethra. E. H. Roeser and H. L. Kretschmer.—p. 16.
Sterility. W. C. Scrivner.—p. 19.
Clinical Evaluation of Serologic Tests for Syphilis in 8,000 Cases. J. M. Lubitz.—p. 20.
Classification of Strabismus. A. J. Strich.—p. 25.
Bismuth Subsalicylate in Oil the Treatment of Choice in Vincent's Angina. H. D. Grossman.—p. 28.
Hemochromatosis: Clinical, Chemical and Pathologic Study of Case. H. R. Fishback and F. H. Fowler.—p. 30.

Infections of Female Urethra.—Roeser and Kretschmer report 41 unselected cases of chronic infection in Skene's glands and in the periurethral glands. The authors emphasize that these lesions are a frequent but overlooked cause of urinary symptoms. In the group studied frequency of urination was the chief symptom. The authors point out that good illumination is important for the examination of Skene's glands. When infected, the openings of Skene's glands are red, sometimes appear larger than normal and often appear elevated. Pressure may show pus exuding from them. The openings of the periurethral glands, when infected, are red and sometimes swollen. Aid in localization can be obtained by a small wire meatal speculum or a pair of bent hairpins to retract the external urethral orifice or by gentle stripping of the urethra. Urethritis is often present. Occasionally there is temporary relief by instrumentation with sounds or a cystoscope as the result of pressure of these instruments on the infected glands, causing the expression of retained discharge. Treatment consists in the destruction of the infected glands by means of the high frequency current with a fulguration electrode inserted into the bottom of the infected glands. In some cases this may be up to ½ or ¾ of an inch. The most distal glands are treated first. Following fulguration, a warm sitz bath is taken three or four times a day. The relief of symptoms is prompt. Reexamination is indicated in eight to ten weeks. Hospitalization is not necessary. Associated infection elsewhere in the urinary tract should be eliminated.

Journal of Bone and Joint Surgery, Boston

28:1-212 (Jan.) 1946. **Partial Index**

*Iliac Bone Transplantation: Preliminary Observations. I. L. Dick—p. 1.
Use of Cancellous Chips in Bone Grafting. S. L. Higgs.—p. 15.
Method of Treatment of Chronic Infective Osteitis. I. M. Robertson, and J. N. Barron.—p. 19.
Pyogenic Osteomyelitis of Spine: Differential Diagnosis Through Clinical and Roentgenographic Observations. J. Puig Guri.—p. 29.
*Osteochondromata of Pelvic Bones. R. K. Ghormley, H. W. Meyerding, R. D. Mussey Jr. and C. A. Luckey.—p. 40.
Late Rupture of Extensor Pollicis Longus Tendon Following Colles's Fracture. F. M. Smith.—p. 49.
Orthoroentgenography as Method of Measuring Bones of the Lower Extremities. W. T. Green, G. M. Wyatt and Margaret Anderson.—p. 60.
Ligaments of Knee Joint: Relationship of Ligament of Humphry to Ligament of Wrisberg. O. C. Brantigan and A. F. Voshell.—p. 66.
Treatment of Fracture-Dislocation of Interphalangeal Joints of Hand. R. C. Robertson, J. J. Cawley Jr., and A. M. Faris.—p. 68.
Position of External Hip Joint in Above-the-Knee Prosthesis with Pelvic Suspension: Experimental Approach to Problem. A. R. Buchanan and B. E. Robinson.—p. 71.
Mutational Dysostosis (Cleidocranial Dysostosis). A. B. Soule Jr.—p. 81.
Arthrodesis of Hip Produced by Internal Fixation. J. J. Niebauer and D. King.—p. 103.
Vertical Traction in Early Management of Certain Compound Fractures of Femur. B. E. Obletz.—p. 113.
Resection of Clavicle in Vascular Surgery. D. C. Elkin and F. W. Cooper Jr.—p. 117.
Transverse Sacral Folds. Mildred Trotter and R. D. Heath.—p. 120.
*Bacteriologic Examination of Gastric Contents in Diagnosis and Management of Tuberculosis of Bones and Joints. A. L. Banyai and A. V. Cadden.—p. 137.
Fracture of Medial Epicondyle with Displacement into Elbow Joint. J. Patrick.—p. 143.
Trichinosis as Cause of Meralgia Paresthetica. H. H. Cohen.—p. 153.

Iliac Bone Transplantation.—Dick reports 8 cases and shows that cancellous chip grafts are of value in the arthrodesis of joints, in the repair of bone defects and in some forms of nonunion or delayed union of fractures. A cortical graft may be needed to preserve the shape of a bone, but, if stability of the fractured bone can be maintained by means other than the use of a cortical graft, cancellous chips alone will produce union. The main disadvantage of a tibial bone graft is that it usually has to be cut from an intact tibia. Plates and screws of absorbable plastic material, used with cancellous chips from the ilium, would appear to be the ideal method of osteosynthesis.

Osteochondromata of Pelvic Bones.—Ghormley and his associates report 40 cases of osteochondroma of the innominate bone in which operation was performed at the Mayo Clinic during the years 1910 to 1943 inclusive. In each case the diagnosis was verified by microscopic examination. A total of 69 operations were performed on these patients. Nine of the patients are known to have died, and 8 are known to have had one or more recurrences. In 2 cases not all of the tumor was removed at the time of operation. In 4 of the 40 patients malignant changes were later found. In 16 patients (not included among the 40) microscopic examination revealed that the lesions were malignant at the time the patients were first operated on. The authors have seen 2 cases in which the symptoms continued and ultimately a chondroma was revealed.

Examination of Gastric Contents in Tuberculosis.—Banyai and Cadden during the past seven years have studied 22 cases of bone tuberculosis in which an attempt was made to corroborate the clinical diagnosis by bacteriologic examination of the fasting gastric contents. In 7 of these 22 patients with various forms of orthopedic tuberculosis, tubercle bacilli were found in the fasting gastric contents. In the presence of an

orthopedic involvement of obscure origin the presence of tubercle bacilli in the fasting gastric contents, though not absolute proof of the tuberculous nature of the disease, should be looked on as important presumptive or circumstantial evidence.

Maine Medical Association Journal, Portland

37:1-20 (Jan.) 1946

Medical Aspect of Disease of Thyroid Gland. J. O. Piper.—p. 1.
Cesarean Section as Adapted to Physician. P. A. Millington.—p. 6.

37:21-44 (Feb.) 1946

Diagnosis and Primary Surgical Treatment of Injuries of Hand. W. E. Browne.—p. 21.
Cancer of Skin and Orificial Mucosae. L. Babalian.—p. 29.

New England Journal of Medicine, Boston

234:71-102 (Jan. 17) 1946

*Progress in Treatment of Subacute Bacterial Endocarditis. C. B. Favour, C. A. Janeway, J. G. Gibson and S. A. Levine.—p. 71.
Acute Obstruction of Small Intestine: Report of 118 Cases. W. R. Moses.—p. 78.
Epistaxis. H. H. Amsden.—p. 81.
Cardiovascular Disease Among Veterans of World War II: Survey of 19,870 Cases. A. H. Traum and Blanche B. Wilcox.—p. 82.
Symposium on Medical Sociology: Health Insurance Plans. N. W. Faxon.—p. 86.
Subacute Bacterial Endocarditis: Portal Cirrhosis of Liver.—p. 90.
Tuberculosis of Spine.—p. 94.

Subacute Bacterial Endocarditis.—Favour and his associates reviewed the 347 proved cases of subacute bacterial endocarditis treated at the Peter Bent Brigham Hospital from 1913 to 1945. There were no known recoveries among 237 cases seen between 1913 and 1937, during which time a great variety of therapeutic procedures were employed. Of the 90 patients observed from 1937 to 1943, 55 received adequate treatment with a sulfonamide. Sixteen of the latter patients were given simultaneously fever therapy. Of these, 1 treated with infra-red radiation and 3 treated with typhoid vaccine recovered and have remained well for two to four years. None of the other sulfonamide treated patients recovered. Of 20 patients studied since January 1944, 17 were given large doses of penicillin. The infection of 11 patients has been cured or arrested and they are now alive. The follow-up periods vary between six and eighteen months. In 2 others the infection was bacteriologically arrested but death occurred some weeks later because of complications. Congestive heart failure may follow recovery from the infection. Dental sepsis, extraction of teeth and dental manipulations were found to be related to the onset of this disease in a surprisingly large number of cases. Infected teeth should be removed before treatment is completed as a prophylaxis against subsequent reinfection of the heart valves. Although penicillin appears to be a promising cure for subacute bacterial endocarditis, patients who recover from this disease are left with the same or further valvular deformities which continue to predispose them to reinfection or to subsequent congestive heart failure.

New Jersey Medical Society Journal, Trenton

43:1-34 (Jan.) 1946

Neurosyphilis: Its Diagnosis and Treatment. H. S. Read, L. I. Kaplan and F. T. Becker.—p. 5.
Clinical Experiences in Treatment of Low Back and Sciatic Pain Associated with Disorders of Intervertebral Disk. H. Briggs and S. Keats.—p. 13.

43:35-76 (Feb.) 1946

Thrombosis of Basilic Axillary and Subclavian Veins of Undetermined Origin. L. A. Eigen.—p. 45.
Treatment of Diarrheas. J. Gerendasy.—p. 50.
Two Cases of Ozena Cured by Pickrell Solution. R. J. Vreeland.—p. 52.

Physiological Reviews, Baltimore

26:1-168 (Jan.) 1946

Histochemical Contributions to Physiology. E. W. Dempsey and G. B. Wislocki.—p. 1.
Coronary Circulation. D. E. Gregg.—p. 28.
Recent Experimental Studies on Leukemia. J. Furth.—p. 47.
Neural Mechanisms of Cutaneous Sense. G. H. Bishop.—p. 77.
Absorption of Triglyceride Fat from Intestine. A. C. Frazer.—p. 103.
Use of Isotopically Marked Carbon in Study of Intermediary Metabolism. J. M. Buchanan and A. B. Hastings.—p. 120.
Yawning and Associated Phenomena. A. Price Heusner.—p. 156.

Radiology, Syracuse, N. Y.

46:1-106 (Jan.) 1946

*Superficial "Burns" of Skin and Eyes from Scattered Cathode Rays. L. L. Robbins, J. C. Aub, O. Cope, D. G. Cogan, J. L. Langohr, R. W. Cloud and O. E. Merrill.—p. 1.
Roentgenology of Draining Bronchi from Tuberculous Cavities. M. R. Camiel.—p. 24.
Study of Ureters in Bladder Neck Obstructions. F. H. Squire and H. L. Kretschmer.—p. 32.
Diagnosis of Pes Planus by X-Ray. W. L. Bonnet and D. R. Baker.—p. 36.
Pneumonoconiosis Due to Cotton Dust (Byssinosis): Case Report. P. V. McCarthy and W. R. Akenhead.—p. 46.
Unusual Case of Multiple Chondromata. R. Gurney and L. Cohen.—p. 48.
Roentgenographic Demonstration of Concretions in Submandibular Glandular Duct by Use of Intraoral Films. G. D. Monardo.—p. 53.
Protection Against X-Rays and Gamma Rays: Tolerance Dose or Tolerance Intensity. E. H. Quimby.—p. 57.
Id.: Radiation Injury. R. S. Stone.—p. 59.
Id.: Genetic Injury. P. S. Henshaw.—p. 62.
Id.: Human Factors. R. B. Taft.—p. 65.
Id.: X-Ray Protection in Industrial Fluoroscopy. G. C. Henny.—p. 66.
Id.: Materials and Methods of X-Ray Protection. G. Singer and G. C. Laurence.—p. 69.

"Burns" of Skin and Eyes from Scattered Cathode Rays.—Robbins and his associates report injuries received by 6 men in the department of radiology at the Massachusetts General Hospital as a result of a few seconds exposure to scattered electrons from a 1,200 kilovolt electrostatic generator. The exact dosage could not be determined but was probably between 1,000 and 2,000 "tissue roentgens." The lesions had the unusual characteristic of appearing in three phases, the last one becoming manifest approximately four weeks after the exposure. Except for a mild injection of the conjunctiva in 3 men, coming on within a few hours after the exposure, no ocular signs occurred during the first two phases of reaction. Severe ocular signs developed in 1 man in the tertiary phase and consisted of punctate epithelial lesions accompanied by severe photophobia, lacrimation and foreign body sensation. The cathode ray burns were analogous to, but different from, thermal burns and roentgen ray reactions. The primary reaction resembled an intense sunburn and lasted about the same length of time but was not followed by tanning. The secondary reaction was characterized by edema with bleb formation. At the same time 3 of the men showed new areas of involvement, appearing at varying intervals in parts which had been protected by clothing. These areas also showed superficial edema and deep plum colored pigmentation characteristic of the primary reaction. Some went on to bleb formation and even to destruction of the full thickness of the skin. Several areas that had healed broke down for the second time. None of the lesions involved tissues deeper than the dermis. In 1 man permanent injury occurred in areas of maximal destruction. Epilation was not apparent until complete destruction of the superficial layers of the skin had occurred, and only in those areas severely injured. Six months after the exposure, the hair appears to be returning even in areas where the injury was extensive and relatively deep. Pigmentation is absent or irregular in the areas of deep burns in 2 men. Telangiectasis has developed in 1 man to a greater extent than that seen in thermal burns. In comparison with severe roentgen ray reactions, the cathode ray reactions became manifest much sooner and caused decidedly less pain. The rate of recovery seemed to be much more rapid than would have been the case in lesions of similar extent caused by roentgen rays. The late effects are somewhat similar, but there seems to be considerably less atrophy in those burned by the cathode rays, and the tanning which usually follows roentgen ray reaction is not seen. Pigmentation is seen as small freckle-like areas separated by nonpigmented skin.

South Carolina Medical Assn. Journal, Florence

42:1-28 (Jan.) 1946

"A History of the Case" in Franklin D. Roosevelt's Own Words.—p. 1.
Primary Cysts of Omentum. D. L. Maguire and A. J. Buist.—p. 2.
Use of Curare (Introcostrin) in Reducing Convulsive Effects of Tetanus. C. B. Hanna.—p. 5.

42:29-52 (Feb.) 1946

Use of Histamine Compound in Treatment of Infantile Eczema. G. D. Johnson.—p. 29.
National Health Program Message from President of the United States.—p. 31.

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An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

30:65-128 (Feb.) 1946

Ocular Cysticercus Cellulosae: Report of Case of Parasite in Vitreous. C. Cockburn.—p. 65.
Tangential Displacement of Iris in Chronic Glaucoma. W. J. B. Riddell. —p. 74.
*Temporary Cataracts in Diabetes. R. D. Lawrence.—p. 78.
Solar Eclipse—Burn of Macula. E. C. Zorab.—p. 82.
Case of Eclipse Blindness. N. A. Jevons.—p. 84.
Case of Siderosis Bulbi. J. E. L. Bendor-Samuel.—p. 85.
Effect of Operative Alterations in Height of External Rectus Insertion. J. Foster and E. C. Pemberton.—p. 88.
Meningioma of Tuberculum Sellae with Bitemporal Hemianopia. W. R. Mathewson.—p. 92.
Dacryocystorhinostomy. T. K. Lyle, A. G. Cross, J. F. Simpson and G. A. Fraser.—p. 102.

Temporary Cataracts in Diabetes.—Lawrence observed the development and disappearance of cataracts in 2 men aged 39 and 45 with diabetes mellitus. Both patients had myopia but with otherwise normal eyes when first seen for diabetes. Both had a high blood sugar but no ketosis and no signs of dehydration. The cataracts of the first patient commenced about the sixteenth day of insulin treatment and lasted three weeks, of the second patient about the third day of diet and lasted four to five weeks. The two were similar in their dark rosette appearance and in occupying the central and upper quadrant of the lens. The process seems quite different from the common transient myopia and hypermetropias, which occur respectively at the acute onset and subsequent control of the diabetes and last usually a few days to two weeks, for during even intense refractive changes the media remain quite clear.

British Medical Journal, London

1:117-154 (Jan. 26) 1946

Social Medicine. M. Greenwood.—p. 117.
Irregular Hemagglutinins After Transfusion. Sheila T. Callender. —p. 119.
Clinical Diagnosis of Lumbar Intervertebral Disk Protrusions, with Indications for Their Operative Removal. J. E. A. O'Connell.—p. 122.
Surgical Treatment of Dysenteric Lesions of Bowel Among Allied Prisoners of War in Burma and Thailand. E. E. Dunlop.—p. 124.
*Streptococcal Miliary Infiltration of Lungs: Description of Case. P. Ellman.—p. 127.
Hereditary Clubbing of Digits in Two Families. E. Davis.—p. 128.

1:155-192 (Feb. 2) 1946

Psychologic Reactions in Soldiers to Loss of Vision of One Eye, and Their Treatment. P. M. Duke-Elder and E. Wittkower.—p. 155.
Occurrence of Flagellate in Sputum of Case of Bronchiectasis. G. D. Lehmann and J. T. Prendiville.—p. 158.
Abacterial Pyuria. D. O. Peters.—p. 160.
Two Cases of Amebic Granuloma. G. Howells.—p. 161.
Crush Syndrome and Plasma Jaundice in Pregnancy. R. W. Danziger. —p. 162.
Bacteriology of Septic Fingers. B. P. Le Quesne.—p. 163.

Streptococcic Miliary Infiltration of Lungs.—Ellman encountered a number of nontuberculous pulmonary infections closely simulating in their clinical and radiologic appearances pulmonary tuberculosis but healing by natural resolution within a relatively short period. In some such cases the streptococcus has undoubtedly been a causal organism. The author presents a case of simple achlorhydric anemia complicated by the sudden onset of acute streptococcic septicemia with miliary pulmonary localization. A dramatic response to penicillin therapy (aided by transfusions and iron therapy for the anemia) resulted in complete resolution of the lung lesion. In the reported case the sputum was collected on a laryngeal mirror, and precautions were taken to avoid contamination by mouth organisms. A heavy growth of hemolytic streptococci was repeatedly found and, in view of the severe toxemia and the clinical and radiologic lung aspects, there was undoubtedly a hematogenous lung infection of streptococcic origin. Miliary infiltrations of the lung, apart from those of a tuberculous nature, may occur as a miliary carcinomatosis, in silicosis, in bronchiolitis (particularly following influenza and measles), in Hodgkin's disease as a lymphadenomatosis, in leukemias, in certain pulmonary mycoses, in bilharziasis, in Boeck's sarcoidosis, in miliary amyloidosis of the lung and in miliary stasis of the lung with mitral stenosis. The term miliary was used in the reported case because the radiologic appearance of the lung simulated a miliary tuberculosis.

Journal of Hygiene, London

44:227-306 (Jan.) 1946

Quantitative Aspects of Antigen-Antibody Reactions: I. Theory and Its Corollaries. T. Teorell.—p. 227.
Id.: II. Some Comparisons Between Theory and Experimental Results. T. Teorell.—p. 237.
Studies in Dynamics of Disinfection: V. Temperature Coefficient of Reaction Between Phenol and Bact. Coli, Derived from Data Obtained by Improved Technic. R. C. Jordan and S. E. Jacobs.—p. 243.
Id.: VI. Calculation of New and Constant Temperature Coefficient for Reaction Between Phenol and Bact. Coli. R. C. Jordan and S. E. Jacobs.—p. 249.
Warm Stage Observations on Development of Pseudomycelia in Cultures of Avian Tubercle Bacilli Grown in Dilute Embryo Extract. E. M. Brieger and H. B. Fell.—p. 256.
Differentiation of Streptococcus Cremoris and Streptococcus Lactis by Means of Bacteriophage Action. G. J. E. Hunter.—p. 264.
Thermolabile Substance of Shigella Dysenteriae Shiga. L. Olitzki, M. Shelubsky and P. K. Koch.—p. 271.
Fluorine Alopecia. L. Spira.—p. 276.
Enteric Fevers in Egypt. G. N. Cossery.—p. 284.
Three Rapid Tests for Estimation of Tropical Fitness of Fabrics. W. Koch.—p. 286.
Routine Method of Bacteriologic Analysis and Grading of Ice Creams, with Records of Eleven Years' Application. A. Compton and G. Youssef.—p. 289.
A. L. 63, Original British Army Louse Powder. H. J. Craufurd-Benson and J. Macleod.—p. 294.

Lancet, London

1:113-148 (Jan. 26) 1946

Tetanus in African and European Theaters of War: 1939-1945. J. S. K. Boyd.—p. 113.
Tuberculous Rheumatism. W. Sheldon.—p. 119.
Difficulties in Diagnosis of Rheumatic Fever. H. S. Barber.—p. 122.
Continuous Epithelization on Large Denuded Areas. J. E. Sheehan and J. Jenney.—p. 123.
Erysipeloid. S. Singer.—p. 124.
Erysipeloid of Rosenbach: Response to Penicillin. Mary Barber and M. Nellen.—p. 125.
Nongreasy Jelly Base for Penicillin. J. Spencer, E. J. Bishop and A. Ricks.—p. 127.

1:149-184 (Feb. 2) 1946

Care of the Aged: Observations Based on Experience in Glasgow Outdoor Medical Service. M. Curran, J. S. Orr, J. Hamilton, W. Poole and E. N. Thompson.—p. 149.
Dust in Surgical Theaters as Possible Source of Postoperative Tetanus. D. T. Robinson and J. W. McLeod.—p. 152.
Determination of Blood Groups: Use of Rabbit Immune Serum. S. G. Rainsford and W. T. J. Morgan.—p. 154.
Hippuric Acid Synthesis Test of Liver Function: Some Difficulties in Interpretation. Sheila Sherlock.—p. 159.
Comparative Value of Tuberculin Tests. E. H. W. Deane.—p. 162.

Medical Journal of Australia, Sydney

2:417-448 (Dec. 15) 1945

Gastroenteritis and Dysentery in Children: Bacteriology of Cases Caused by Salmonella and Dysentery Organisms. F. Draper.—p. 417.
New Guinea Campaign. F. K. Norris.—p. 425.
Prescribing in the Metric System. H. Finnemore.—p. 431.
Fluid Balance in Scrub Typhus. R. Andrew.—p. 432.

2:449-480 (Dec. 22) 1945

Some Laboratory Findings Pertaining to Clinical Use of Penicillin. S. D. Rubbo and Marjorie E. Davey.—p. 449.
Prickly Heat. F. R. Fay and E. Susman.—p. 453.
Physiotherapy in General Practice. B. G. Wade.—p. 456.
Hirst's Hemagglutination Phenomenon Exhibited by Rickettsia Orientalis (Syn. Tsutsugamushi). J. L. O'Conner.—p. 459.
*Syndrome in Vivax Malaria Probably Due to Spontaneous Subcapsular Hemorrhage of the Spleen. R. Andrew.—p. 460.
Hemopericardium as an Autopsy Finding. C. Duncan.—p. 464.

Acute Abdominal Syndrome in Vivax Malaria.—Andrew describes an acute abdominal syndrome which was observed in 10 of about 6,000 patients with vivax malaria. The syndrome is characterized by sudden severe pain in the left upper quarter of the abdomen, usually referred to the tip of the left shoulder. It is accentuated by deep breathing and lasts for periods varying from a few days to many weeks. Tenderness is present in the left hypochondrium, but no true rigidity. The onset of the syndrome was in no case related to trauma. It is usually

closely related to an overt attack of malaria but may occur three months later. All patients recovered with conservative treatment. Spontaneous subcapsular hemorrhage of the spleen is thought to be the most likely cause of the syndrome.

Semana Médica, Buenos Aires

52:841-874 (Nov. 29) 1945. **Partial Index**

*Pregnancy and Parturition in Women with Pelvic Abnormalities Due to Poliomyelitis. F. A. Uranga Imaz and R. Dubrovsky.—p. 854.
Kinesic-Orthopedic Treatment in Volkmann's Ischemic Retraction. A. R. Viviani and V. R. Marino.—p. 860.

Pregnancy and Parturition in Women with Poliomyelitic Pelvis.—In a period of ten years 15 pregnant women with pelvic asymmetry due to poliomyelitis were observed by Uranga Imaz and Dubrovsky in a group of 100,000 women who had antepartum examinations and who were delivered in the Beneficent Maternity Hospital of Buenos Aires. The group included 10 primiparas, 4 secundiparas and 1 tertipara. Pelvic asymmetry of the oval pseudo-oblique type was encountered by roentgen examination in all these pregnant women. The pelvic lesions due to mechanical factors were found on the side of the pelvis which corresponded to the normal leg. When the whole leg was partially or completely paralytic, pelvic atrophy of the affected side and mechanical changes of either or both sides were encountered. The pelvic changes due to mechanical factors were more complicated when crutches were not used. Parturition was normal in all women except 2, who had dystocia and uterine hypertonicity respectively. These women were delivered of living normal infants by cesarean section.

Acta Medica Orientalia, Jerusalem

4:363-402 (Nov.) 1945

Ascaris Lumbricoides: Review of Its Most Important Facts. G. Witenberg.—p. 363.
*Surgical Complications of Ascariasis. H. Milwidsky.—p. 370.
Ascariasis of Duodenal Bulb (with 3 Case Reports). A. Druckmann and S. Schorr.—p. 385.
Pharmacologic Basis of Anthelmintics in Ascaris Therapy. L. Schindel.—p. 387.
Postarsphenamine Jaundice in Pregnancy (with Case Report). A. Sadowsky and Y. M. Bromberg.—p. 391.

Surgical Complications of Ascariasis.—In this report Milwidsky is concerned with the surgical complications to which ascariasis may give rise. Discussing ileus due to Ascaris, he reviews 10 cases of his own and shows that there are five different types: (1) mechanical obstruction by worm convolutes, (2) a paralytic type of ileus, (3) a spastic ileus, (4) invagination by ascariasis and (5) volvulus by ascariasis. Milwidsky has observed perforations of the bowel, postoperative disturbances due to ascaris, appendicitis and diverticulitis as well as ascariasis of the stomach and duodenum, bile ducts and liver. The 17 cases mentioned in this paper were encountered in the course of six years. The most effective method to forestall surgical complications of ascariasis is its prevention by an antiparasitic prophylaxis and early anthelmintic treatment if an infestation has taken place. As soon as the acute abdominal symptoms appear, anthelmintic treatment may be dangerous. At that stage surgical intervention becomes imperative.

Acta Medica Scandinavica, Stockholm

122:479-580 (Dec. 12) 1945

Rare Form of Cold Agglutination. W. F. van Eck.—p. 479.
*Cause of Postsyncopal Oliguria. C. Brun, E. O. E. Knudsen and F. Raaschou.—p. 486.
Occurrence in Human Serum of Yellow Substances Different from Bilirubin and Carotenoids. T. K. With.—p. 501.
Bilirubin and Urobilinoid Contents of Human Bile. T. K. With.—p. 513.
Prognosis of Late Syphilitic Cardiovascular Lesions. H. Buch.—p. 529.
Prognostic Significance of Electrocardiogram in Late Syphilitic Cardiovascular Lesions. H. Buch.—p. 540.
Psychogenic Increase in Blood Pressure: War Hypertension. M. Ch. Ehrström.—p. 546.

Cause of Postsyncopal Oliguria.—Brun and his associates in this report endeavor to demonstrate that postsyncopal oliguria is due to the increased supply of antidiuretic hormone from the posterior lobe of the pituitary gland. The following experiments support this hypothesis: 1. Transfusion of blood from recently collapsed subjects with postsyncopal oliguria to water loaded subjects causes a distinct fall in their diuresis. 2. The changes in the chloride concentration in the urine and the absolute output of chloride in the urine during postsyncopal oliguria correspond to the changes observed after administration of pituitary injection. 3. Circulatory collapse in 2 patients with moderate diabetes insipidus is followed by postsyncopal oliguria of much shorter duration than in normal persons.

Nordisk Medicin, Gothenburg

26:891-928 (April 27) 1945. **Partial Index**

Norsk Magasin for Laegevidenskapen

Gold Treatment of Chronic Polyarthritis. Investigation to Illuminate Question of Its Justification. W. L'Orange.—p. 893.
Intoxication from Eating Tunny. A. Strøm and W. Lindberg.—p. 903.

Hygiea

Pathogenesis in So-Called Catarrhal Jaundice. E. Bergenfeldt.—p. 907.
Investigations on Transperitoneal Resorption of Erythrocytes. S. Hedenstedt.—p. 912.

26:1257-1292 (June 22) 1945

Graphologic Diagnosis. Recent Development of Graphology and Its Value in Diagnosis and Prognosis. O. Brüel.—p. 1257.

Hospitalstidende

*Bleeding Nipple. S. Kaae.—p. 1261.

Hygiea

Operative After-Treatment in Cases of Amputated Hand and Arm. E. Severin.—p. 1279.
Ruptured Vein in Ectatic Myoma.—Fatal Abdominal Hemorrhage. O. Robertsson.—p. 1283.

Bleeding Nipple.—Of 73 patients with bleeding nipple treated at the Copenhagen Radium Station from 1931 to 1944, 36 had cancer of the breast; in the others there was usually intracanicular papilloma or fibroadenomatosis. In 6 of the cases without palpable tumor or localized firmness on the first examination a cancerous node developed later. The safest treatment is removal of the entire breast.

27:1341-1386 (July 6) 1945

*Porphyria Diseases: Review of Recent Points of View Together with Case with Quantitative Porphobilinogen Determination and Provocative Tests with Barbiturates. J. Jørgensen and T. K. With.—p. 1341.
Way of Transporting Cultures from Throat in Suspected Cases of Diphtheria. I. Rantasalo.—p. 1345.

Hospitalstidende

Case of Thrombophlebitis Saltans Treated with Dicumarol for Three Fourths of Year. J. O. Feilberg.—p. 1347.

Hygiea

Experiences in Prophylaxis Against Tuberculosis. E. Forsgren.—p. 1355.
Treatment of Gangrenous Loop of Small Intestine. H. Wahren.—p. 1359.

Svenska Läkarasällskapets Förhandlingar

Treatment with Artificial Fever. H. Malmros.—p. 1365.
Remarks on History of Psychiatric Fever Therapy in Sweden. B. Jacobowsky.—p. 1369.

Porphyria Diseases—Jørgensen and With state that the so-called acute porphyria is inherited as a dominant character and is a permanent disorder of the pyrrole metabolism, which may remain latent or lead to acute attacks of abdominal pain with or without neurologic symptoms. Attacks may last hours or days. They may terminate spontaneously or be fatal. A tendency to spontaneous recovery is observed when barbiturates are withheld. A special pyrrole substance, porphobilinogen, is converted into uroporphyrin III and the red pigment porphoben, which are specific for acute porphyria. The barbiturates can apparently provoke attacks of acute porphyria and aggravate existing attacks. The grave prognosis of the disease is ascribed to the extensive use of barbiturates (Waldenström). Chemical diagnosis is simple. If the urine is alkaline the colorless porphobilinogen will not cause formation of pigments, and acute porphyria may be present although the urine is of normal color. In the 2 cases of latent porphyria reported the excretion of porphobilinogen was demonstrated by Vahlquist's method.

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Book Notices

Manual of Diagnosis and Management of Peripheral Nerve Injuries. By Robert A. Groff, M.D., Lieutenant Colonel, M. C., A. U. S., and Sara Jane Houtz, B.S. With an introduction by I. S. Ravdin, M.D., Brigadier General, M. C., A. U. S. Cloth. Price $6. Pp. 188, with 111 illustrations. Philadelphia, London & Montreal: J. B. Lippincott Company, 1945.

This short manual on peripheral nerve injuries is divided into two major portions. In the first division the authors present a conventional review of most of the facts known about the anatomy and physiology of peripheral nerves, the reactions of injured nerves, the surgical repair of nerve injuries and the details of nerve recovery and regeneration. This portion is well written and useful but adds nothing to the existing literature on peripheral nerve injuries; at the same time it is felt that important subjects such as causalgia and the regeneration of nerves following repair are too briefly dismissed. In the discussion of electrical reactions following nerve repair no mention is made of the important contribution of Pollock and his co-workers on cathode tetanus ratios. The second part of the manual, however, is highly useful and original. It is a graphically illustrated, page by page presentation of the functions of all the peripheral nerves, with an easily understood visualization of the technics used in the testing of the involved muscles. There are in addition a number of clear and accurate illustrations showing surgical dissections in the more commonly encountered areas of peripheral nerve injuries. This portion of the book is a true contribution to the literature on peripheral nerves and may be recommended to surgeons, general practitioners, medical students and physical therapists as a valuable aid in the diagnosis of peripheral nerve injuries.

The Tissues of the Body: An Introduction to the Study of Anatomy. By W. E. Le Gros Clark, F.R.S., Dr. Lee's Professor of Anatomy in the University of Oxford, Oxford. Second edition. Cloth. Price, $7. Pp. 388, with 120 illustrations. New York & London: Oxford University Press, 1945.

The author concedes that anatomy is a difficult subject for the beginner; therefore he has been accustomed to introduce the subject by a series of lectures dealing with the organization of living tissues. He speaks of "the fundamental problems of anatomy . . . and the application of experimental methods in the study of structural organization." He quotes Alexis Carrel concerning tissue culture as "the most important event in the history of anatomy." By interesting the student in the problems of anatomic research the author hopes to stimulate his intellect and open new pathways of inquiry. Medical students in the first and second years do not have "the graduate student outlook" but are concerned with soaking in as much dissection and descriptive anatomy as possible. The proper way to study anatomy is to recognize it as a difficult yet basic factor in the life of the doctor and to buckle down to the mastering of these difficulties. There is no royal road, no short cut, no Berlitz method. The author's style seems rather dry and heavy instead of achieving the "stimulation" desired.

Jobs and the Man: A Guide for Employers, Supervisiors, Interviewers, Counselors, Foremen, and Shop Stewards in Understanding and Dealing with Workers—Veterans or Civilians. By Luther E. Woodward, Ph.D., Field Consultant, Division on Rehabilitation, National Committee for Mental Hygiene, and Thomas A. C. Rennie, M.D., Associate Professor of Psychiatry, Cornell University Medical College, New York. Fabrikoid. Price, $2. Pp. 132, with 2 illustrations. Springfield, Ill.: Charles C Thomas, 1945.

Today proper placement of workers in industry is being more successfully achieved than ever before because of the development of new technics. In this informative book the principles of job placement are clearly stated. Many are concerned in the problem of understanding the worker and assigning him to suitable tasks, and this book is written so that foremen, shop supervisors, employees and counselors can read it with profit and understanding. Attention is directed to the difficulties of handling returned veterans in industry, and a thoughtful solution is offered to the problem of rehabilitating the man with a neuropsychiatric history. Physicians will find much of interest in the discussions on interviewing workers who have returned from military service and will learn something of their difficulties in resuming a place in industry. A brief summary of the likely obstacles encountered by some veterans in learning the ways of peace in the home, in society and in a new job is succinctly stated. Proper placement of the worker is of benefit both to the individual worker and to industry. Job satisfaction is an important part of every one's life, and it assumes a major role in the development of a healthful mental attitude toward life. The family doctor can be helpful in guiding the maladjusted to seek and secure work that will make them good workers with a happier view of life. Estimates indicate that 10 per cent of the population have serious emotional difficulties and that 20 per cent would derive benefit from counseling and guidance. It is regretted that the authors did not fully recognize the help given patients by many family doctors in the solution of perplexing problems of proper placement and the derivation of work satisfaction. The book is a valuable guide to all who deal with workers in the present complex industrial life.

Arteriosclerosis: A Chemical and Statistical Study. By Jóhannes Björnsson. Denne Afhandling er af det lægevidenskabelige Fakultet antaget til offentligt at forsvares for den medicinske Doktorgrad. København. The translation into English by Robert Fraser. Paper. Pp. 249, with 4 illustrations. Copenhagen: Einar Munksgaard, 1942.

This work, presented as a thesis for a doctor's degree, attempts to support or refute the clinical impression obtained from postmortem examinations that arteriosclerotic disorders are much rarer in Iceland than in Denmark. The first third of the book is devoted to a critical review of the earlier reports of the prevalence of arteriosclerosis in various previous series. The author points out that wide discrepancies between different series are due to variations in age and sex distribution and environmental factors such as city and country life, which in turn affect materially the opportunity or desirability for hospitalization and for postmortem examination. Patients with arteriosclerotic conditions are likely to die suddenly or after a short illness and are therefore much less likely to be hospitalized in rural districts than in city areas, in Iceland than in Denmark. Statistics based on postmortem examination cannot be accepted as reliable because the incidence of arteriosclerosis depends on many unrelated factors. Furthermore, diagnosis and severity of involvement often depend on personal judgment, which is difficult or impossible to standardize. Other criteria for diagnosis such as blood pressure measurements, x-ray examinations and palpation of arteries are not reliable or comparable from one series to another.

The author attempted to develop a quantitative chemical method of evaluating and classifying arteriosclerosis depending on correlation of chemical with anatomic findings. He examined 382 nonsyphilitic aortas from Vienna and found no consistent agreement between the macroscopic and the chemical involvement. The latter was judged by the cholesterol and calcium content of dried and powdered aortas after removal of the adventitia. He also studied the mortality statistics from Iceland and Copenhagen. After complicated corrections and analyses he concludes that deaths from arteriosclerotic diseases are just as common in Iceland as in Copenhagen. Any apparent differences seen in crude death rates are due to different facilities for and conditions of hospitalization in the two communities.

The thesis was originally written in Danish. The translation is somewhat awkward but is quite understandable. The book contains tables of 200 cases from Copenhagen and Vienna and 130 from Iceland, giving the age, height, weight, blood pressure, diagnosis and cause of death, macroscopic description of the aorta and cholesterol and calcium content of each aorta. The volume describes a tremendous amount of work. One wonders whether the same conclusions might not have been justified and reliable after a smaller number of determinations.

The Principles and Practice of Rectal Surgery. By William B. Gabriel, M.S., F.R.C.S., Surgeon to St. Mark's Hospital for Cancer, Fistula, and Other Diseases of the Rectum, London. Third edition. Cloth. Price, 45s. Pp. 432, with 248 illustrations. London: H. K. Lewis & Co., Ltd. 1945.

In this book, which is the third edition since 1932, there are 17 chapters with 237 illustrations and 11 colored plates. Chapter II contains a short and incomplete discussion of "proctitis," and chapter XVI is entitled "Carcinoma of the Anus and Anal Canal." These chapters are new and apparently are the reason why a new edition was considered necessary because, with few other exceptions, the remainder of the book is identical with the second edition, which appeared in 1937.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

HYPERTENSION

To the Editor:—Is there anything specific for hypertension?

Lena A. G. Miller, M.D., Napa, Calif.

ANSWER.—There is no specific medication curative of hypertension. Nor are there any specific curative surgical procedures. Hypertension per se is not a disease but a symptom or biologic response to continued and excessive arteriolar stimulation. The sources of such stimulation or irritation differ in each and every instance of the disorder. Therefore no 2 cases of hypertensive arterial disease should be treated identically; curative therapy invariably is dependent on eradication or amelioration of etiologic factors, and these are extremely variable. It can be predicted that no one will ever find the cause of hypertension, simply because there are many causes. Similarly, it is highly improbable that any "specific" curative therapy, generally applicable to all or most cases of the disease, will be discovered in the future.

This discussion does not imply that there are no useful drugs effective in the treatment of hypertensive disease. There are many medicaments which have great usefulness in the control of hypertension, each with specific and limited indications. These drugs may be classified under several headings:

1. Sedatives, to reduce central nervous system tension.
2. Vascular antispasmatics, including
   (*a*) Soluble nitrites (amyl nitrite, sodium nitrite) and soluble organic nitrates (glycerol trinitrate, erythrol tetranitrate, mannitol hexanitrate).
   (*b*) Insoluble nitrates (bismuth subnitrate).
   (*c*) Potassium thiocyanate.
   (*d*) Certain tissue extracts.
3. Cardiac drugs:
   (*a*) Digitalis and allied substances.
   (*b*) Theophylline and allied derivatives.
4. Antianemia medications.

Certain surgical procedures, particularly the Smithwick operation, designed to sever the vasomotor trunks and thus reduce the vascular hypertonia, are effective in certain instances. However, these operations admittedly are only palliative. The neurosurgical approach fails in that it does not take cognizance of the primary etiologic factors responsible for the disease; it merely destroys one of several physiologic mechanisms concerned with the maintenance of vascular tone. A few, but only a few, instances of hypertension are secondary to unilateral renal disease, and a still smaller number are due to tumors of the adrenal gland. Surgical, like medicinal, therapy must be guided by etiologic analysis.

EFFECT OF IRRADIATION OF OVARIES ON SUBSEQUENTLY CONCEIVED OFFSPRING

To the Editor:—A woman was operated on for a cystic ovary two and a half years ago. She had a chocolate cyst with endometrosis. A year later she had six x-ray treatments which stopped her menstrual periods for nine months. She has been menstruating at twenty-four day intervals for the past nine months. What are the possibilities of her having a deformed or mentally deficient child if she becomes pregnant now? How long after x-ray treatments over the ovaries before such treatments will have no effect on the child?

John T. Murchie, M.D., Portsmouth, Ohio.

ANSWER.—At present, proof that irradiation of the ovaries before conception takes place has any effect on the children born subsequently to the irradiated woman is lacking. In animals, on the other hand, the matter of irradiating the ovaries has been subjected to experimental study. J. P. Greenhill (Year Book of Obstetrics and Gynecology, 1940, p. 681) says "The question of the safety of irradiation of the ovaries is by no means settled. Many of those who use this form of therapy to overcome amenorrhea and sterility are enthusiastic about their results and claim the procedure is harmless. If we can apply experimentation in lower animals to human beings, then irradiation of the ovaries may be of distinct harm." Muller in 1926 subjected both male and female fruit flies to varying doses of x-rays. The treated flies were then bred to untreated males, and at the same time numerous control matings of the same genetic type consisting of untreated males crossed with untreated females were carried out for comparison. Muller said "The results in these experiments were startling and unequivocal—it was found that the heaviest treatment had increased the frequency of mutation about 150 times, an increase of 15,000 per cent." Muller emphasizes that if human beings are affected by x-rays in the same way as flies, one cannot expect to find much evidence of a mutational effect of x-rays on them from data derived only from the first or even the second and third generations. But such a negative result will therefore by no means indicate a lack of significant genetic effect. Muller pointed out that all the principles of heredity so far described in the fruit fly have proved applicable to animals and plants in general.

However, in the 1943 Year Book of Obstetrics and Gynecology, page 508, Greenhill says "In the past I, among others, have urged great caution with low dosage irradiation because of the reports in the literature, chiefly those of Muller, of serious harm to the offspring in the third and fourth generations in various species of animals. In human beings the offspring have been normal, but as this treatment is less than 20 years old no one knows what will happen to the third and fourth generations. However, in a personal communication William Snow writes he calculated that according to Muller all life should have been destroyed by cosmic irradiation, since in a million years about 50,000 roentgens of such energy reached the earth's surface, as judged by the Geiger-Muller readings. We must conclude therefore that there must be a recovery of the genes. Gordon and Sang have prevented with niacin fruit fly mutations induced with irradiation. According to Snow, this is practical proof that the genes can recover from radiation injury."

The conclusion to be reached from these statements is that harm has not appeared in the first generation of children born after irradiation of the ovaries; but irradiation during pregnancy often results in malformation of the child in utero.

COAGULATION TEST BEFORE CIRCUMCISION

To the Editor:—Is there any value in doing a routine coagulation test on infants prior to circumcision? Is this procedure routine in the majority of our best hospitals?

Harvey G. Bland, M.D., Newport News, Va.

ANSWER.—It is well worth while. Preferably a coagulation test should be done on every patient before any operative procedure, even minor surgery, is done. As far as is known, coagulation tests are not done as a routine measure prior to circumcision in the majority of hospitals.

ASCENDING PARALYSIS AND UREMIA

To the Editor:—In a case of uremia due to chronic nephritis there developed terminally an acute ascending paralysis and a motor paralysis with varying degrees of pain over the entire body and neck; preceding this there was some fever of about 100 to 102 F. There were no convulsions, and the patient was conscious until a few minutes before death. The question is: Is this rather typical Landry's paralysis a frequent occurrence in uremia? Could there have been the two disease entities either or both producing death? I can find nothing in the literature relative to this relationship. Kindly elucidate if possible.

M.D., South Dakota.

ANSWER.—An acute ascending paralysis of the Landry type as a terminal event in a patient with uremia from chronic nephritis is practically unknown. There seems to be in this case, however, no reason to doubt the diagnosis, for the absence of sensory loss excludes acute ascending myelitis, and acute poliomyelitis or acute toxic polyneuritis is untenable as a diagnosis. Landry's paralysis is encountered in influenza, typhoid, pyogenic infections, food poisoning, tick bites, postvaccinal and postexanthematous disease, rabies and diphtheria. The etiologic agents are indeed varied. Toxic uremia of chronic nephritis may well be added to the list, if other causes can be excluded by a complete study of the case.

REACTION TO PENICILLIN

To the Editor:—I wish to report a personal experience with the use of penicillin. Having read of the use of a fine spray of the solution in the treatment of infections of the respiratory tract, I decided to try it for laryngitis. The solution was made up of 0.1 Gm. of the sodium salt in 50 cc. of isotonic solution of sodium chloride. It was used in a nebulizer. Probably 2 cc. was used for the first and only treatment. On the following morning my lips were swollen and red. Later in the day fine vesicles developed accompanied by considerable burning and itching. There was desquamation on the third day. The appearance was similar to dermatitis venenata. There is a possibility of developing angioneurotic edema, involving the pharynx and larynx, if treatment is continued. The symptoms might be confused with those of progression of the original disease process.

John C. Urbaitis, M.D., Warren, Pa.

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